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SOME INTERESTING FRACTURES OF THE SPINE*

BY GEORGE M. SABIN, M.D.†

MY object in reporting these three cases is not to demonstrate any unusual treatment but to show the extent to which a spine may be damaged and return to a good functional result without much treatment except rest in bed.

I know that to many of you, with large city opportunities, results like these are commonplace, but to us up in Vermont they are interesting. It is also noteworthy that all three of these cases occurred within a period of six months and within a few miles of each other.

The plates are not very clear as they were taken under difficulties with small machines and by rather inexperienced operators.

CASE I

Mrs. L., aged 40, farmer's wife.

The auto in which she was riding in May, 1930, was struck by a train. She was taken to a small

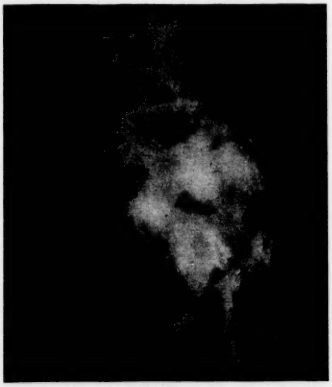

FIG. 1.

hospital in a neighboring town. She had no sensory or motor paralysis and very little pain. Pathology: Comminuted fracture dislocation of first lumbar vertebra.

TREATMENT

Three months in bed. During part of this time she had some tingling in the legs and had Buck's extension applied for a short time. In October, 1930, six months after the accident, she came to the Mary Fletcher Hospital in Burlington for an x-ray of the back saying that, after a regular day's work as a farmer's wife, her back would feel tired.

August 1, 1931 she was the same and working as usual.

CASE II

Robert S., aged 19, farmer.

On April 16, 1930, he fell about eight feet, landing in a sitting position on a hard floor. He had immediate paralysis from the waist down including the bladder and the rectum. This was Dr. Lyman Allen's case and if he were here he could give more of the details of the care. Pathology: Fracture dislocation of the first lumbar vertebra.

TREATMENT

He was placed on a Bradford frame especially to aid in the nursing care. He had a very stormy convalescence including extensive bedsores and a periurethral abscess.

He was discharged June 24, 1930, nine weeks after his admission with an indwelling catheter in the bladder and with fair control of the bowels.

May 15, 1931, one year after the accident, he drove his automobile 35 miles to the hospital for his picture. He walks freely, has no pain and has good rectal control. He has good bladder control, although the bladder function is still rather slow but steadily improving. He does light farm work.

His pictures are very much like those of Mrs. L. the preceding case.

CASE III

Mr. D., aged 32, laborer.

On September 21, 1930, while walking on the railroad track in the night he was struck by a train. Upon admission to the hospital he had complete motor and moderate sensory paralysis from the waist down. Bladder and rectal functions were not affected. He had some fractured ribs and was apparently fatally injured. Our equipment in this hospital, for a case of this character, was very meagre and it was necessary to borrow a Bradford frame from another hospital. The man was put on the frame with his feet tied to the end of the frame and the bed put in extreme Trendelenburg position. The man was very dirty, a real mess, but it was impossible to do anything for him and it did seem that he could live but a few hours. However he decided otherwise and in three weeks he was in good physical condition. It then seemed best to attempt some operative procedure so with the backing of Lyman Allen, I found courage to try.

The first lumbar vertebra was dislocated to the left and the transverse processes of the first and second vertebrae crushed. The fragments of bone were removed, the canal found open and free and the cord appeared to be uninjured. It was impossible with any means at hand to even consider any attempt at reduction of the dislocation. An Albee graft from the tibia ten inches long was placed in the

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10-11-12 dorsal and 2-3-4 lumbar vertebrae bridging the space of the first lumbar. The graft was in approximation with the first lumbar where the transverse process was removed.

A plaster cast in the form of a large sheet was wrapped around the trunk from the arms to the hips. The patient was delirious for eight days and in spite of the cast and the nurses tried to get out of bed several times. He was of course a ward patient and could not be watched constantly. Because of the condition of the skin by reason of our inability to clean the back, he was very uncomfortable and constantly rubbed the back by sidewise motions and as a result opened up the upper end of the wound and dislodged the upper end of the graft. In spite of this slight accident which did not cause

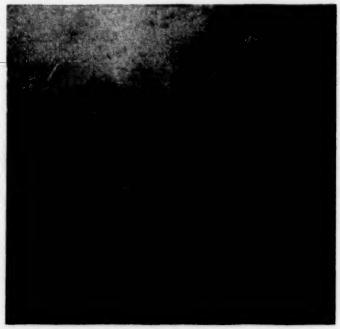

FIG. 2.

him any inconvenience, following the operation the motor function steadily improved. The bone graft was allowed to remain for seven weeks and it apparently held the fragment until a good callus formed; the graft did not cause any inconvenience. It was then removed by grasping the exposed end with lion-jawed forceps, pulling it out. The wound completely healed in four weeks and has remained so.

Three and a half months after the accident he got out of bed in the night and walked around it. From that time he continued to sit up in bed for he would not be controlled. Four months after the accident he was discharged wearing a brace and walking with two canes. Rather he was not discharged for he would not stay. July 1931, ten months after the accident, he was walking around without canes, did not wear his brace and could pick up objects from the floor quickly by bending forward. He has no pain. His only inconvenience is inability to flex the thigh sufficiently high to go upstairs easily. The plate shows the position at the present time and it is practically the same as the first picture.

I am very sorry I cannot show this case in person for it is rather hard to believe that a person with a spine in this position can be up and around without pain and infirmities.

The noteworthy observation from these cases is that when the vertebrae are dislocated laterally the cord may not be seriously injured.

I fully realize that though these persons are comfortable and without symptoms at the present time, there will unquestionably come a time when symptoms of pressure and irritation will appear.

Discussion

Dr. Robert B. Osgood, Boston, Mass.: Dr. Munro and some of the rest of us wish our practice lay in Vermont.

In discussing the fractures of the spine, it is in the first place a case of classification and the division should be roughly into those cases which have cord symptoms and those cases which do not, and it is rather futile to discuss those which have cord symptoms; each presents an individual problem and must be so treated.

So far as my feelings go, the safest rule by far, if you are in doubt as to the wisdom or futility of operating, is to tip the scales in favor of futility and not operate. As to the other class of cases that do not have cord symptoms, the mass is comprised of the so-called compression or crush fractures. Here we meet a very important problem, one that needs our best effort, namely, the effort of having suspicion, in the case of injury of the back of any kind, of the possibility of a compression fracture. That suspicion is the key that opens the door of diagnosis.

I have been especially interested in the subject for many years.

As to the question of treatment of these compression fractures, we know that many of them get well with no treatment except rest in bed plus the assurance of a proper return of position of the spine so that later postural defects from the kyphos at the region of the fracture, increasing with function as time goes on, do not cause symptoms. It is the postural defect which causes symptoms later and not the fracture. Many of these will have attained a perfect internal healing by bone to bone and yet unless the postural defect has been corrected the symptoms continue.

We wish to call attention to the newer method of treating these, namely, the complete reduction of the fracture as first devised by Davis, of Erie, and carried out in a more gradual way by Rogers, of Boston, by his bed. It is a very possible way of correcting them so completely and satisfactorily that recently we have been amazed in obtaining complete reduction of the fracture in a woman sixty years old, on a Rogers bed, so that the roentgenologist said afterward he doubted whether there had been any compression fracture. Fortunately we had the original plate to show him.

These cases often have an absence of pain and an immediate state of recovery, yet later on persisting symptoms. They can be judged as end results only after six months or even a year.

My conviction is that until they are treated from the point of view of postural attack, they will have symptoms that might not be disturbing to Dr. Sabin's Vermonter who complains of a little pain in doing her housework, but who

will probably complain later of arthritis, and in a less hardy community they will suffer sufficient pain to produce neurasthenia, or real disability.

I should like to have time to discuss Dr. Sabin's cases in detail. I fancy I could be a raven and say that the first one will probably have trouble in the future and that the second one may have trouble. Even in his second case there was little deviation of the spinous processes, and the important factor was the kyphos. The next to the last patient might be said to demonstrate healing quality of function, or something like "ain't nature grand!"

Dr. Donald Munro, Boston, Mass.: I have some figures on fractured spines which I think will be interesting because they are so bad. We have had in our clinic, since January 1, twelve cases of spinal injury. I have no opinions and don't know anything about the spinal column injury that doesn't involve the spinal cord, and I always get a doctor when I have one of those cases to deal with, but I do feel strongly about the proper way to treat the cases that have spinal column injury, and in addition have spinal cord injury.

Of the twelve cases of spinal injury seven died. They all died from spinal cord injury. Of the remaining five, four had no cord injury and all are living. The deaths were from the following causes: two of old age; two of bronchial pneumonia—we have a very efficient hospital; we take care of them forever,—one of surgical shock; one of cord injury; and in one we didn't know the cause of death. The only living cord injury case is a thoracic case which was operated on.

Some of the fatal cases were operated and others were not operated but, nevertheless, died. It seems to me that this spinal cord injury problem regardless of the method of treatment, is a very, very serious one. I think, though, that there is one rule that can be laid down in regard to the operability of these cases. I don't know that I am quite so pessimistic as Dr. Osgood, because I think if I put off operating in all the cases where I thought it would be futile, I would never operate, and I do think you can select cases that will probably do better with operation, as well as cases that will probably do worse with operation. I think the operable cases are those in which you can demonstrate a partial or complete block in the cerebrospinal fluid flow. That was brought out first by Coleman, of Virginia, a good many years ago and I think abundantly proved in all the neurosurgical clinics as being a very reliable rule to follow. If you can demonstrate a complete or partial block in the cerebrospinal fluid flow, then that case is entitled to operative interference in the nature of a laminectomy. If the flow is normal the case is not entitled to operative interference and the patient must take his chances in regard to his future disability.

The first sign of a block in the cerebrospinal fluid flow may not be evidenced by the change in dynamics as measured by the spinal manometer, but in the total protein content of the fluid removed at lumbar puncture from below the level of the potential block. I believe this fact is fairly important because it gives us an opportunity to operate at a time when we may hope to do more for the damaged cord than we might otherwise be able to do, and I would urge that Coleman's rule of operating in the face of a block be modified to read that operation should be performed when a chemical block is demonstrable in these spinal cord injury cases.

Dr. G. M. Sabin: I really haven't anything more to say but I did notice that the dislocation, or whatever dislocation there was, was lateral, and that is what saved these cases I think. If it had been forward, there would have been nothing to do; apparently in the lateral dislocation there is some kind of chance.

RESULTS OF SURVEYS OF THE PUBLIC HEALTH CONTROL OF MILK SUPPLIES IN 152 AMERICAN MUNICIPALITIES WHICH HAVE ADOPTED THE MILK ORDINANCE RECOMMENDED BY THE PUBLIC HEALTH SERVICE

The Public Health Service milk program has now been in existence for a period of eight years. During that interval 444 American municipalities, located in 25 states, have adopted the program in a coördinated attempt to improve and to unify milk control methods in this country. The 1931 edition of the Public Health Service Milk Ordinance and Code, which is the nucleus around which the program is built, has now been approved by the Bureau of Dairy Industry of the U. S. Department of Agriculture. Therefore it may be stated that rapid progress is being made toward the ideal of a practically nation-wide adoption of one uniform milk control program.

Such a nation-wide unification of milk control will have many advantages:

It will increase the average safety of milk supplies in the United States and prevent most of the forty to fifty epidemics of milk-borne disease which are being reported each year to the Public Health Service. It will increase milk consumption because people will have greater confidence in standard grades of milk. It will simplify the enforcement work of the health officer because he will be able to use standard practice and therefore the accumulated experience of many cities in carrying out the same standard methods. It will reduce the cost of milk sanitation to the producer and distributor, and hence to the consumer, by standardizing and stabilizing milk sanitation methods and equipment. There can be no doubt that the frequent changes in local milk ordinances due to local political changes have

(Continued on Page 1055)

NEW ENGLAND BRANCH, AMERICAN UROLOGICAL ASSOCIATION

A CASE OF BULLET WOUND OF THE KIDNEY*

BY ROGER C. GRAVES, M.D.†

THE following case of bullet wound of the kidney is of clinical interest because of the extreme rarity of this injury in civil life.

The patient, an American salesman, white, married, aged 45, entered the hospital on July 27, 1930. One hour before admission he was shot with an automatic revolver, the bullet piercing his chest on the left side. He stated that he walked home after the injury, and lay down before going to the hospital, because he felt weak. He did not lose consciousness. There was no severe pain, and the bleeding from the wound was slight.

The routine physical examination was essentially negative, except for the region of the injury. There was a small puncture wound in the 6th interspace in the left anterior axillary line of the chest, and a smaller puncture wound posteriorly in the line of the angle of the scapula in the 10th left interspace. The lung fields were clear. The percussion note was resonant throughout. The apex beat was seen and felt in the 5th interspace in the midclavicular line, 7½ cm. from the midsternal line. The heart was not enlarged to percussion, and the sounds were of good quality. The pulse was normal in rate and rhythm. The abdomen was tender and slightly distended, but it was tympanitic throughout. There was no evidence of free fluid. X-ray films of the chest revealed no foreign body and no fracture of the ribs. The general condition of the patient was excellent. He presented none of the signs of shock. Antitetanus serum was given, and he left the hospital August 3.

On August 8, 12 days after the injury, he returned to the hospital because of hematuria, and a urological consultation was requested. I found the patient with the appearance of marked anemia. The bullet wounds were clean and dry. The urine was bloody. On abdominal examination the left kidney could be felt easily, but it was neither enlarged nor tender. I attempted a bladder inspection with the cystoscope, but in spite of prolonged irrigation with large quantities of fluid, clear vision could not be obtained. It was finally possible to see that there were masses of dark, firm, blood-clot within the bladder. Nothing could be found, however, to suggest an intravesical lesion as the cause of the hemorrhage. The trigone was normal in appearance. The ureteral orifices were covered by clots. Because of the signs of rapidly progressing anemia, it was apparent that prompt surgical intervention was necessary, but in an effort to be as certain as possible that the left kidney was really the source of hematuria, intravenous urograms were made with uroselectan. The films showed normal conditions on the right side of the urinary tract, but on the left side a faint outline of a double renal pelvis with the upper portion badly distorted could be seen. A blood transfusion was given on the following day in preparation for operation.

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†Graves—Urologist to the Carney Hospital. For record and address of author see "This Week's Issue", page 1062.

Operative Note: August 14, 1930.
Diagnosis: Bullet wound of left kidney.
Operation: Nephrectomy, left.
Anesthesia: Nitrous oxide oxygen.
Field prepared with iodine and alcohol.

A left lumbar incision was made below and parallel with the 12th rib. The renal fossa was entered in the usual manner, after dividing muscle and fascial layers. Peritoneum and left dorsal nerve were not injured. The kidney was found very adherent, dark, and almost necrotic in appearance. A small portion of the lower pole anteriorly presented the only area of normal gross characteristics. There were dense adhesions to the muscles of the posterior body wall and to the peritoneum and in the region of the upper pole beneath the diaphragm. In the last-named area there was an accumulation of dark, blood-stained, foul-smelling fluid. The kidney was enucleated with great difficulty. The vascular pedicle was carefully freed from the dense thickened structures around it, and double-tied with No. 2 chromic catgut. The upper ureter, which proved to be bifid, was divided and tied with the same material. All bleeding points were carefully ligated with No. 1 plain catgut. The wound was washed with saline and its edges were painted with 2% mercurochrome. Cigarette drains were led to the upper and lower poles of the cavity, and two strips of iodoform gauze were packed in the region that had been occupied by the necrotic upper portion of the kidney. The wound was then closed with No. 1 chromic catgut in two layers of muscle and fascia. Dermal sutures were used for the skin. The patient left the operating room in fair condition.

Pathological description: The kidney (showing specimen) includes considerable perirenal fat, and measures 15 x 9 x 8 cm. The posterior surface shows the presence of adherent muscle tissue. There is a rubber drain which extends transversely through the upper pole, from a point on the medial aspect near the hilus to a point on the lateral border near the posterior surface. This represents the path of the bullet. The organ has not been sectioned because it is being preserved as a gross specimen.

Diagnosis: Bullet wound of the kidney with hemorrhage.

The patient made a very satisfactory recovery. A rapid pulse rate following operation slowly subsided under digitalis therapy. An inlying urethral catheter was necessary also for a time, in order to aid in ridding the bladder of clots. On September 8,—25 days after nephrectomy, he was discharged to his home in good condition. The wound was completely healed. The urine was straw-colored, cloudy, acid; 1012; albumin—slight trace; sugar—negative; sediment—a rare red blood cell and a few leucocytes.

A message recently received from the patient in July, 1931, stated that he was enjoying excellent health.

REMARKS ON PROCEDURE IN CASES OF URINARY OBSTRUCTION*

BY ARTHUR H. CROSBIE, M.D.†

I JUST want to sound a word of warning about over-investigation and over-instrumentation in cases of urinary obstruction, especially in people who are beginning to show signs of renal insufficiency.

It is perfectly natural that the young, well-trained man should want to use all methods at hand in order to make a complete and an accurate diagnosis, by cystoscopy, cystograms, ureterograms and various studies. To my mind, a man with an over-distended bladder and beginning to show signs of renal insufficiency has to be handled very carefully, with the least amount of trauma. The chief thing in a man of that sort is to get decompression of his bladder and adequate drainage with the least possible amount of trouble, and to my mind that can best be done by suprapubic drainage. It is easy in that way to decompress the bladder gradually and when you have established drainage you know that you have sufficient drainage.

In my own practice, I do not cystoscope many of these patients. If I do, it is done on the operating table and the bladder is opened immediately afterwards. I am not saying that it is not all right to cystoscope people with a moderate amount of obstruction, who are in good condition, but I am referring especially to the men with the large residuals, who are beginning to show signs of renal insufficiency.

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†Crosbie—For record and address of author see "This Week's Issue", page 1062.

I can recall three cases that I have seen in the last six months in which the patients were lost and to my mind largely through too much investigation and delay in getting adequate drainage. I will mention just one.

An elderly man entered the hospital with acute retention, having a history of several months' difficult urination. He had a large residual urine which was very foul. He had a high N.P.N., around 50. This man was put on catheter drainage and under the drainage he improved a great deal. At the end of ten days his N.P.N. had dropped to 33 and he was beginning to get into pretty good condition, excreting a good amount of urine. At the end of that time the man was cystoscoped and also had cystograms done. Cystoscopic examination showed a large opening of a large diverticulum and the cystogram showed the presence of a large diverticulum, together with a very foul urine. Following this he was put on catheter drainage; he developed epididymitis, began to slip, his N.P.N. went up, he developed marked distention and in a few days he died.

Of course it is quite possible that that man might not have been saved in any other way but it seems to me that with a case of that sort, showing renal insufficiency, the first thing to have done with him is to have put him on adequate suprapubic drainage. He could have been cystoscoped but if so the bladder should have been opened immediately.

In the last six months there have been three similar cases to my knowledge that have been lost and I think because they were not given sufficient drainage.

CONSERVATIVE TREATMENT OF STRICTURE OF THE URETHRA*

BY AUGUSTUS RILEY, M.D.†

ABOUT ten years ago in the clinic of the Genito-Urinary Out-Patient Department, Boston City Hospital, Dr. Atkinson and I felt that the end results of postoperative urethral stricture were bad. Patients would return to the clinic a long time after having been operated on. Some were in worse condition than before the operation. We found that the average patient believed that the operation had cured him and his troubles were over. These patients were hard to treat. It meant one or two years before the urethra could be dilated enough so that the patient could void normally or it meant another perineal operation. So we undertook the task of treating all urethral strictures that came into the clinic in a conservative way. Within this ten-year period there have been more than 350 cases of urethral strictures treated in this manner. The degree of these strictures ranged from the small slow stream type with a demonstrable constricted portion of the urethra to those of complete urinary obstruction.

Our procedure is as follows: gentleness, so far as possible, is always the forethought. A filiform bougie is introduced; this may call for a great deal of time and manipulation. We have found that the so-called "cork-screw tip" filiform works best in most of the very tight or completely obstructing strictures. The penis should be pulled out its full length, which will

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†Riley—Assistant Professor of Genito-Urinary Surgery, Harvard Medical School. For record and address of author see "This Week's Issue", page 1062.

often obliterate interfering folds of the urethra. A filiform will allow the patient to drain his bladder. If there is much bleeding following this procedure no further dilation is undertaken at this time. If the bleeding is slight the stricture is dilated more with follow-up bougies, attached to the screw tipped filiform. After each instrumentation the urethra is irrigated with hot potassium permanganate solution 1-8000. The patient is given a prescription for some urinary antiseptic and he is instructed to force the ingestion of fluids and to take hot sitz baths if possible several times before he returns to the clinic the next day for observation.

When the patient returns on the next day after his first dilation, he should have nothing more than an urethral irrigation of hot potassium permanganate solution 1-8000. If on the next succeeding visit to the clinic he is voiding well but shows a blood-tinged urine the urethral irrigations should be continued until all signs of bleeding have disappeared.

The length of time between the succeeding dilations and the degree of each succeeding dilation depend on the bleeding more or less each time. Bleeding means trauma and continued trauma is what we want to avoid as much as possible. So we have made it a rule to stop instrumentation each time as soon as there is any bleeding from the urethra.

In this series of cases there have been two accidents. In one case the filiform was broken off and lost back of the stricture. The patient was kept ignorant of this fact. He came to the clinic for his regular course of urethral dilations. The urethra was dilated enough finally, so that the operating cystoscope entered the bladder with ease, and the lost filiform removed without the patient suspecting that he was going around for six months with a filiform in his bladder. In the second case the filiform was lost back of the stricture because of an apparent flaw in the make-up of the screw tip joining the filiform with the follow-up bougie. The urethra of this case was much traumatized by attempts to grasp the lost filiform with different instruments. This case had to have a perineal operation, not for his stricture but for an early perineal extravasation. The urethra was opened back of the stricture. The operating cystoscope was passed into the bladder through the perineal opening of the urethra. The lost filiform was found, grasped with cystoscopic forceps and removed. The patient had an uneventful convalescence and came to the Out-Patient Clinic for a continued treatment of his urethral stricture.

Since we have adopted this conservative method in treating strictures of the urethra in our Out-Patient Department, there has not been an internal or external urethrotomy done for the common urethral stricture on a single case referred from the Out-Patient Department to the hospital proper for operation. Many house-officers have passed through their hospital service without seeing an internal or external urethrotomy performed.

We have been fortunate in following a large majority of the cases in this series and have found the end results far better, we believe, than the cases that have had an internal or external urethrotomy.

INTRAVENOUS UROGRAPHY IN INFANTS AND CHILDREN*

BY THOMAS HINCKLEY LANMAN, M.D.†

IT was hoped that intravenous urography would be of especial value in children and infants by eliminating the difficulties and dangers attending the older methods of cystoscopy and retrograde pyelography; and in those cases which could not be subjected to cystoscopy with pyelography because of their size, or on account of anomalies of the genito-urinary tract.

The following reports with illustrations are presented to show the advantages, disadvantages and limitations of this new method as we have found them. All patients are less than twelve years of age. The series covers the commoner types of urinary tract disorder occurring in early life, as well as a number of types less commonly found. They represent a fair cross section of the pathological conditions of the urinary tract of early years, and form a satisfactory basis for our conclusions.

TECHNIQUE AND DOSAGE

In our earlier cases we took films immediately and at least every fifteen minutes after the injection of the drug, up to two hours; and in some cases at even longer intervals. In many cases the drug throws a shadow within a very few minutes after injection, but in studying our results for the purpose of economy in minimizing the number of films necessary, it would appear that the films that show the best concentration of the drug in the kidney pelves and ureters are those taken about forty-five to sixty minutes after injection. The drug is given in the x-ray room. The patient is put on the x-ray

*This paper is an abstract of a more detailed report. (Lanman, Thomas H., and Mahoney, Patrick J.: Intravenous urography in infants and in children. Am. J. Dis. Child. 42:611 [Sept.] 1931.)

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†Lanman—Assistant in Surgery at the Harvard Medical School. For record and address of author see "This Week's Issue", page 1062.

table in the Trendelenburg position with the bladder bag inflated, and the exposures of 1/10th to 1/20th of a second are used. In these small patients we are unable to obtain enough coöperation by their holding their breath to obtain a satisfactory film by the longer and more desirable exposures. It is, therefore, not possible to use the Potter-Bucky diaphragm. Fluids are limited before and during the procedure. Catheterization of the bladder before the films taken at forty-five to sixty minutes after injection of the drug may often give better visualization of the lower end of the ureters.

The dosage as outlined by Swick was followed in most of our work, and the injection given by the gravity method. As the small dose threw no shadow, when injected in some of the young infants, we tried larger doses in later cases. A full adult dose to patients under a year of age was given on three occasions with no reaction. In only two cases was there any reaction noticed in using a proportionately large dose of the drug.

In spite of the reports in the literature at that time regarding the non-toxicity of the drug, the use of greater doses in these small patients was given only after careful consideration, and in the hope that better visualization of the urinary tract might result. There was at that time very little information regarding the use of the drug in small infants. In our experience, severe reaction is unusual but does not seem to be entirely dependent on the dosage of the drug, nor on the degree of kidney damage present as shown by the clinical picture and the laboratory findings.

E. G., case 4, aged 2 years, on admission has an N.P.N. of 280 mg.% Following bladder drainage the N.P.N. dropped to 55 mg.%. No reaction followed a full adult dose at this time. There was little if any visualization of the kidneys and ureters, however.

Severe reaction is possible, though not usual, nor predictable to any certainty. As it seems established that no better visualization of the urinary tract is likely to be obtained by larger doses of the drug, it seems unwise in general to use them for these small patients. We had one death, case 5, aged 6½ mos. and ¾ adult dose was used. Here the N.P.N. was 27 mg.%, and the P.S.T. 30% in two hours. Although the laboratory findings are such as to indicate that there was not so severe kidney damage as in some others where a proportionately larger dose of this drug was given, there was a fatal outcome within eighteen hours. While the cause of death cannot be definitely attributed to uroselectan, the premortal signs developed so shortly after its administration, that this possibility cannot well be disregarded.

Except for the fatal case mentioned, the only other case having an appreciable reaction was case 7, age 6-9/12 years, a boy with obstruction at the bladder outlet, who after a full dose of uroselectan, had a rise in temperature, flushing, and some nausea and vomiting. This lasted only a few hours. The N.P.N. was at the time of injection 25 mg.%.

Lantern slides illustrating the conditions found in the cases selected were shown.

SUMMARY

The present media used for intravenous urography are valuable adjuncts in the diagnosis of urinary tract disease in children. With improvement in the media themselves and in the technique of administration, the value of this procedure will doubtless increase. It seems advisable, however, to point out certain very definite limitations of its use in children, and especially to urge that the time has not yet come for its general use by the practitioner of pediatrics who is unfamiliar with the interpretation of the urograms obtained in young patients.

It will be seen and has already been stated by others that cases associated with considerable urinary tract infection and concomitant renal damage may not give a satisfactory visualization of the urinary tract by the use of intravenous urographic media. In our experience the greatest number of cases in infants and children requiring urological investigation are those very ones that have a considerable degree of pyuria and associated kidney damage. From an analysis of 250 cases requiring cystoscopic examination, we found that pyuria was present in a considerable degree in about 60% of the cases.

Cases of megalo-ureters of unknown cause and associated with pyuria form a fairly large group of the urinary tract disorders seen in early life. Cystography in these cases usually gives excellent visualization of the entire urinary tract; intravenous urography little or none. (Cases 1, 2, and 3.)

In cases of congenital obstruction of the bladder outlet (cases 4, 6, and 19) with marked pyuria and associated renal damage, there was likewise little if any visualization of the kidneys and ureters obtained by intravenous urography in the younger cases 4, aged 2 years, and case 6, aged 6 years; but in case 19, aged 10, good visualization was obtained, as shown by the slide.

In some cases of congenital anomaly of the urinary tract, intravenous urography alone will establish the diagnosis. (Case 9, double ureter, and case 12, bilateral polycystic kidneys.)

In other anomalies, case 8, double bladder, with exstrophy of one bladder and hypospadias, the information was not conclusive as to whether there was one, two or more kidneys. Nor was there any visualization of the ureters to either bladder. In cases 7 and 19, which were exstrophy of the bladder following transplanta-

tion of the ureters, intravenous urography gave little definite information. However, this new method of visualization of the kidneys and ureters in such cases is the only one now available.

In the group of cases showing only a mild infection of the urinary tract good visualization is generally obtained by this method. It does not yet give sufficiently good delineation of the urinary tract, however, for the differentiation of the clinical picture of an acute pyelitis that simulates an acute appendix, or the case of subacute or acute appendicitis in which a mild pyuria may be present.

Intravenous urography is not a sufficiently reliable guide in determining the need for continued treatment by pelvic lavage in those cases of unilateral or bilateral pyelo-ureteritis of moderate severity. Of course, the information obtained by retrograde pyelography alone is not sufficient in these cases. The symptoms, duration, the urinary findings and so on, must be considered.

In one case, intravenous urography established the differential diagnosis between new growth of the kidney and new growth of the liver.

In case 10, cystoscopy and retrograde pyelography was impossible, and tuberculosis of the remaining kidney were demonstrated by intravenous urography. The diagnosis could hardly have been missed in this particular case, from the history and physical examination alone. It would seem, however, that intravenous urography is to be of considerable value in such cases.

Cases of urinary calculus, especially those with obstruction of urinary outflow generally give very good visualization of the urinary tract, and in many cases retrograde pyelography may be dispensed with.

In case 16, intravenous urography gave definite information that had not been obtained by repeated retrograde pyelography, demonstrating no abnormality at the ureteropelvic junction, or in the upper calyx of the kidney.

CONCLUSIONS

The value of intravenous urography is limited in cases that have any marked degree of pyuria associated with kidney damage, and this group of cases comprises a large per cent. (about 60%) of the disorders of the urinary tract commonly seen in young patients. The evidence obtained in many such cases is inconclusive and unreliable. Its dangers are presumably slight, but must be considered. At present we are unable to predict from the clinical picture and by various tests of renal function which cases will show a reaction. Cases should be studied carefully and all other simpler means of diagnosis, notably cystography, employed first. Also complete studies of the renal function should be made. In cases not associated with marked pyuria, intravenous urography may often do away with the need for retrograde pyelography. It may sometimes give information not obtained by retrograde pyelography. Its general use in unselected cases and in cases not carefully studied is to be avoided, both on account of the expense and the uncertainty of the information often obtained.

It is our belief that at present the value of this method of obtaining visualization of the urinary tract is directly proportionate to the user's knowledge of urinary tract disease in this age group, and to his experience and skill in the technical procedures necessary for the adequate study and treatment of these conditions.

LYMPHOBLASTOMA AS SEEN BY THE UROLOGIST*

BY J. DELLINGER BARNEY, M.D.†

I WANT to touch very briefly upon the subject of lymphoblastoma which has interested us a good deal. I have done some of this investigation in conjunction with Dr. Francis T. Hunter of the Medical Staff at the Massachusetts General Hospital.

The term "lymphoblastoma" is rather misleading in that it does not cover all the different types of this disease. You may say that this disease in general is characterized by the formation of tumors or glands which are extremely radiosensitive, and they all arise from lymphoid cells. It is classified into 9-10 or possibly more subdivisions which I will not bother you with now.

It was first described by Malpighi in 1666 and then it went until 1832 when Hodgkin described what we recognize now as Hodgkin's disease. Since then it has been more or less in evidence but it is only lately that we have come to recognize its frequency and importance. As urologists we are going to see this and we perhaps have seen it and not recognized it.

We, of the Massachusetts General Hospital Staff, have had lately, so far as I know, seven cases which we have seen clinically. It occurs in both sexes and at all ages. Our youngest case was a child of three months and our oldest patient a man of 81 years. It is 100 per cent. fatal in the long run. Some linger many years

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and others die very quickly indeed. It may affect directly or indirectly, grossly or microscopically, all the organs of the body and all the systems of the body so that the neurologist, the gastro-enterologist and the urologist may see cases of this sort in the course of their practice.

We have gone over the autopsy records for the last ten years and found 54 cases of what we call lymphoblastoma, which is not perhaps a great many but enough on which to base some conclusions. We can exclude 31 of these as having no interest for us because they have no involvement, grossly or microscopically, of the kidneys or other organs of the urinary or genital tract, but there are 11 cases which showed at autopsy gross or microscopic lesions of the urologic tract but which had no clinical symptoms for which the urologist might be called into consultation.

There were 12 other cases which came to autopsy, which were, or might well have been, seen by the urologist, which had gross and microscopic lesions. In addition there were four cases among the seven which I have mentioned as seen by the staff, which have not yet come to autopsy. One is a case of Dr. Smith, another of Dr. Swan, one is a case of bilateral epididymitis and involvement of the spermatic cord, and another is a case of very marked priapism. These patients, so far as I know, are still living. Some very fussy pathologist may say that they are not lymphoblastomas, but they seem to be so far as we can tell.

That gives quite a list of cases—23 coming to autopsy and four more.

At autopsy it was interesting that the kidney was found to be involved in 18 cases. That seems to be the favorite organ attacked. The ureter was involved in 7; the testicle, generally both, in 3; the bladder 6. These ranged from microscopic to gross involvement.

Equally striking is the fact that practically all the retroperitoneal and mesenteric glands were in most cases very markedly and sometimes enormously involved. In many cases the superficial glands of the body were involved. That is an important point which I shall speak of later.

The symptoms for which we were asked to see these patients varied greatly. Some had only pyuria or hematuria of almost microscopic amount, in other cases it was very marked. Some had a mass in the loin, some a pain in the kidney region. There was one case of edema of the lower extremities with certain urinary symptoms. Another case had a little pus in the urine and intermittent pyrexia and secondary anemia. In one case there was a large suprapubic mass. One case had anuria, one had mycosis fungoides and a certain number of urinary symptoms. One case had a subdiaphragmatic mass which was thought for a long time by several of us at the hospital to be a perinephritic abscess. One had prostatism and one case had a bilateral epididymitis with hydrocele. So you see the symptomatology is a very varied one.

Unfortunately, even if you make the diagnosis you cannot do much about it except perhaps to relieve symptoms for the moment because, in the cases which have been seen, it was obvious that the organ which was most involved was only perhaps a portion of the whole disease. In one case there was marked involvement of the kidney, forming a big mass in the loin, and it was simply diagnosed as a tumor of the kidney, but when it came to autopsy it was more than a tumor of the kidney—it was a tumor of practically the whole abdominal cavity, consisting of these very marked glands surrounding the aorta and the vena cava, and this was probably the cause of the edema in the lower extremities in one case. I may say also that while the diagnosis is very difficult and perhaps impossible in certain cases for a long time, we should as urologists examine the superficial glands of the body, particularly those in the posterior triangle of the neck, the supraclavicular region and the femoral triangle. All the glands may be involved but in these three regions it is easy to search for them and, if they are felt, a biopsy can easily be done which will give the diagnosis at once and clear up the whole situation. I think that all of us have overlooked some cases that might have been diagnosed in that way. Also we must not forget the great importance of doing a blood smear. This may clear up the diagnosis at once.

It might be worth while to state that as a result of the autopsies, the pathologist was able to divide these cases into different classes as follows:

Lymphoblastoma	7
Myelogenous leukemia	6
Simple lymphoma	4
Lymphatic leukemia	3
Hodgkin's disease	1
Mycosis fungoides	1

(One case of mine which is not included in the hospital autopsies, an old man with bilateral epididymitis and involvement of the spermatic cord, had what was called aleukemic leukemia.) These subdivisions are more or less arbitrary and will probably be modified as we study our cases further.

The point I want to make is that many of us have seen these cases; many we have recognized but many others have gone without recognition but if we keep in mind the varied symptomatology and hunt for superficial glands we will see more cases than we have in the past.

Here is a specimen of lymphoblastoma occurring in a man of 20-30 years, who had urinary symptoms to a small degree and this large mass

was found in the kidney region. It was diagnosed as a tumor of the kidney and he died before anything could be attempted. At autopsy he had this tremendous mass which represents the kidney, except that there is a little normal kidney structure at the top and an equally large mass which represents retroperitoneal glands. The other kidney was perfectly normal.

RADIUM IN CARCINOMA OF THE PROSTATE*

BY GEORGE GILBERT SMITH, M.D.†

I FIND that the problem of carcinoma of the prostate is still a very baffling one. I also still find that the total removal of the prostate through the perineum is an extremely satisfactory way of handling these cases, provided you can get a case where the growth has not broken through the prostatic capsule and has not extended too far along the seminal vesicles, but unfortunately a great many of the cases are not suitable for a total removal. Consequently the question comes up, what can be done to improve these cases?

Most of them have urinary obstruction. In the cases that do not have urinary obstruction, the condition when discovered has usually advanced so far that the reason why the patient comes to the doctor is that he has metastases in the bones or pressure on the nerve roots and so long as he has no obstruction to urination there is no particular reason for treating his prostate. There is another series of cases where the urinary outflow is obstructed, where the disease has not metastasized to any appreciable degree but where the growth has extended too far to permit total prostatectomy. In that class of cases it has seemed to me that the application of radium is very probably the best method of handling them.

Last fall I made a pilgrimage to Baltimore and New York and in New York went to the Memorial Hospital to see Dr. Barringer filling these prostates with what seemed to me to be tremendous doses of radium. Since then I have been using as large doses as he uses on a very small series of cases. I shall very briefly try to give you the results so far of this method of treating these cases.

There are several questions, it seems to me, that we would like to have answered in regard to this method of treatment. (1) Is the method safe from the point of view of mortality of the patient? (2) Does the implantation of this amount of radium effectively kill cancer cells in the prostate? (3) Does this method relieve obstruction? (4) Are there unfavorable late results?

I have obtained from this series of seven cases the answer to a few of these questions. Is the method safe? I should say that it is probably as safe as any method of handling these cases. Among those six cases that I have done since last November and one I did three years ago, there have been no deaths primarily due to radiation. At the Massachusetts General Hospital we had one death in a man who had a carcinoma of the bladder; I thought from rectal examination that his prostate was malignant and that it should be thoroughly irradiated. He had twenty gold seeds implanted throughout his prostate and around his bladder neck but about two or three weeks after operation he died, and at autopsy showed a pyemia. The local condition showed a mass of fibrous tissue which occupied that place where the prostate had been and in this fibrous tissue were numerous small abscesses, perhaps a few mm. in diameter. It seemed probable that this was the source of his pyemia because his kidneys were in very good condition. Another case was done at the Massachusetts General Hospital in addition to these seven, and the patient did well and left the hospital, so I feel that the method is reasonably safe.

The way in which I have been applying this radium has been to drain the patient by catheter until his kidney function is satisfactory, then open the bladder suprapubically, place a finger in the rectum and put in the gold seeds with long needles. With the finger in the rectum, by putting the radium in from above, you can very accurately gauge the depth and situation of the needle point. You can put it through until you almost feel it directly under the rectal mucosa and then draw it back as far as you want. A trick I learned from Dr. Barringer is to leave the needle in situ until all the seeds have been implanted so that you can tell where each seed deposition has been made. Then I have drained these patients suprapubically over four or five weeks or sometimes longer. I would like to remove the suprapubic tube a good deal before that time but I find that in all these cases there is a very intense cystitis with a great deal of mucus and pus in the urine. The bladders are very sensitive and it has seemed to me that this long period of suprapubic drainage has been necessary in order to get the patient by.

The length of time which the patients have had to stay in the hospital has been 9 weeks—7 weeks—7 weeks—3 months—6 weeks—6 weeks. Another patient stayed three months but he died of pyelonephritis at the end of that time

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and his duration of stay was not due to his local condition.

At the end of the stay in the hospital, most of these cases have been able to leave the hospital with the suprapubic wound closed although of course where a tube has been in that long the holding ability of the wound is a little doubtful and one or two of them have had leakage after going home, usually with closure later on.

The dosage which has been used is as follows: 4000, 2600, 4100, 4700, 5054, 5586 and 3960 millicurie hours. In all but one case this dosage was given in the form of 1.5 to 2 millicurie seeds.

The next question is "Does this dose of radium kill the cancer cells in the prostate?" I have two cases from which evidence could be secured on this point. One of these patients is the one who came to autopsy four months after the implantation of 4100 millicuries of radium. His prostate was changed into fibrous tissue but throughout this fibrous tissue the pathologist reported scattered foci of tumor cells which were apparently growing.

Another case, having 4752 millicurie hours in his prostate, left the hospital after seven weeks with a suprapubic tube because I did not think his bladder neck was free enough to take out the tube, and he returned nine weeks after the implantation of radium. I excised his sinus, punched out the bladder neck and the section which was punched out showed nests of apparently healthy tumor cells with a few mitotic figures. That was over the posterior edge of the very center of the irradiated area. It is true that these nests of tumor cells were surrounded by dense fibrous walls and it is probable that they could not escape from there into the surrounding tissue.

Further evidence on this point may be deduced from the case that had 5054 millicurie hours three years ago. Fibrous contraction resulted at his bladder neck so that he could not void freely. I punched out a piece and it showed some suspicious, but not definitely carcinomatous, cells.

That brings us to the question of the late result of this treatment in the few cases where I feel I can draw any conclusions at all. This case done three years ago has had an intense fibrotic contraction of the bladder neck. He has lost all urinary control although when he left the hospital his control was good. His prostate is a little fibrous knot and he has to have his bladder neck dilated every two or three months. Another case done last November was that of a man whom I could not control by any other method. I had done a partial perineal prostatectomy, he had a rapid recurrence of the growth; I implanted radium seeds and I now believe that the growth of his cancer has been checked. His urine is clear, he no longer bleeds, he empties his bladder but has practically no control six months after the implantation of radium.

I feel that a great deal is still to be learned about this subject but the only way we can do it is by carefully observing the end results of these cases. After all, it is better to have a bladder neck which perhaps has no control than to be dead with cancer of the prostate.

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1. UNUSUAL FOREIGN BODY IN THE BLADDER*
2. UNUSUAL TYPE OF OBSTRUCTION OF THE UPPER URETER*

BY RICHARD F. O'NEIL, M.D.†

I HAVE two very brief case reports. The first one is an unusual foreign body in the bladder.

A young man was sent into the hospital having had a piece of wax drawing crayon introduced into the urethra which had broken off and slipped into the bladder. He was cystoscoped in the Out-Patient Department, and the crayon showed faintly in the x-ray. He had a moderate amount of bladder irritation. I cystoscoped him in the house, and endeavored to remove this body with the cystoscopic rongeur but the body floated in the distending medium and I was unable to grasp it. We obtained some more of the material and tried various solvents without any effect but we did find that this material sank readily in olive oil. We filled the bladder with olive oil, the crayon sank readily to the base of the bladder and was very easily grasped and removed. The young man was very comfortable after his last cystoscopy whereas after the others he had discomfort.

We would recommend the use of mineral oil rather than olive oil, as olive oil may become rancid.

The second case is one of an unusual type of obstruction at the ureteropelvic junction.

The patient, a man of 28, entered the hospital with right-sided pain and microscopic hematuria. X-ray showed two good sized calculi in the kidney. On attempting to cystoscope the patient, I was unable to catheterize the ureter. The catheter simply would not engage. We did an intravenous pyelogram with very good results, which showed simultaneous appearance of the dye on both sides, with marked dilatation of the pelvis containing the calculi. I operated on him, did a pyelotomy, removed the two calculi and endeavored to pass a bougie down the ureter but was unable to get anything into the upper end of the ureter so I enlarged the open-

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ing, put my finger in and felt a process well over a third of an inch long sticking up into the pelvis at the ureteropelvic junction, something resembling a ureterocele occasionally seen at the lower end of the ureter. I then enlarged the opening still further, picked the process up and cut it off. We were then able to pass bougies up to No. 14 readily into the ureter. On section this process consisted of two layers of mucous membrane and submucous tissue, with a very small hole on the top that would just admit a probe. I resected a portion of the pelvis. The patient made a perfect recovery with no leaking. Intravenous pyelogram thirteen days postoperatively shows a certain amount of diminution in the size of the pelvis and I am inclined to think as time goes on that that will contract still more.

HYDRONEPHROSIS FROM ABERRANT VESSEL*

Report of End Result

BY FLETCHER H. COLBY, M.D.†

IT is often impossible to fairly evaluate the end-results of surgical procedures until a considerable length of time has elapsed since operation. This applies particularly to manipulations on the ureter and renal pelvis where obstructive lesions, as a result of surgical interference, may be slow in development and require several years before making themselves evident.

The following case is an example of the possible end-result of conservative renal surgery several years after operation.

The patient was a boy of seventeen admitted to the Massachusetts General Hospital on April 1, 1927. For the past two years he had complained of intermittent attacks of left-sided pain. The pain had been dull in character, non-radiating, situated in the left side of the back, and had been relieved, on occasions, by lying on the left side with a pillow beneath the left flank. Riding on a train or in an automobile had seemed to precipitate some of these attacks. There had been no urinary symptoms or complaints other than the intermittent pain. The past history was unimportant.

Physical examination showed a well-developed, apparently healthy boy with no noteworthy abnormalities. Neither kidney could be felt and no tenderness was present in either loin. The urine contained no pus or blood. A pyelogram of the left side showed a well-marked dilatation of the pelvis and calyces of this kidney, as shown in the first illustration.

Operation was performed under ethylene anesthesia on April 27, 1927. A normal appearing left kidney with a moderately dilated pelvis was exposed. Crossing the ureteropelvic junction and going to the lower pole of the kidney was a small artery tightly stretched across the ureter. Pressure upon this vessel resulted in a very small portion of the lower portion of the kidney tissue becoming cyanotic. The vessel was ligated and cut. This resulted in an immediate emptying of the pelvic contents and demonstrated in a rather striking manner that the aberrant vessel was the cause of the pelvic retention. Examination of the ureter showed no thickening or other abnormality. The kidney was decapsulated on its posterior surface and suspended beneath the costal border. The wound was closed without drainage. Convalescence was normal, with no evidence of infection, and the patient was discharged on the seventeenth day.

This patient was seen on September 20, 1927, five

FIG. 1. Before operation. Left pyelogram showing well-marked dilatation of the renal pelvis with blunting of the calyces.

FIG. 2. Five months after operation. Left pyelogram. The renal pelvis shows a marked improvement over the preoperative condition, the normal cupping of the calyces has been restored and the pelvis is considerably smaller. The operative result appears to be excellent.

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months after operation. He had been free from pain and felt well. The urine was normal on microscopical examination. A left pyelogram at this time showed a marked change from the preoperative picture as shown in the second illustration. The pelvis of the left kidney is seen to be considerably smaller and the normal cupping of the calyces can be clearly seen. In other words the postoperative result in this instance appeared to be excellent.

Upon our solicitation the patient was seen again on August 27, 1930, over three years since operation. He had been free from pain during this time and felt very well, but had noticed blood in the urine on two or three occasions during the past six months. On cystoscopic examination active bleeding could be seen from the left ureter and x-ray examination revealed the presence of a large coral calculus filling the renal pelvis, as shown in the third illustration. Pyelography showed little dilatation of the

FIG. 3. Plain x-ray of left kidney over three years after operation. The pelvis is filled by a large branching calculus.

pelvis, but a marked narrowing of the upper portion of the ureter was evident. There was no pus, but a considerable amount of blood, in the urine.

Operation was performed on August 30, 1930. Exposure of the kidney was difficult because of dense perirenal adhesions. The ureter in its upper portion was surrounded by dense scar tissue. When this was removed it became evident that the ureter was strictured for a distance of an inch and a half below its junction with the pelvis and that its lumen was very much narrowed. Any sort of plastic repair was out of the question and the kidney was

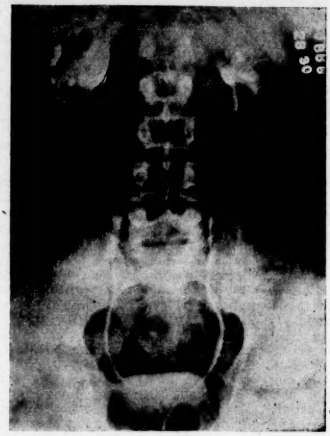

FIG. 4. Pyelogram of left kidney over three years after operation. There is little dilatation of the pelvis but a marked narrowing of the upper portion of the ureter is evident. Normal right pyelogram.

removed. Convalescence was without untoward event and the patient was discharged in fifteen days.

The sequence of events in this case, which resulted in the marked narrowing of the ureter and calculus formation, is perhaps difficult to explain. At no time had there been evidence of any marked degree of infection within the kidney or in the perirenal tissues. The trauma of the first operation is a possible cause of the subsequent scar tissue formation, although the necessary manipulations were easily carried out. Possibly the long-continued presence of the aberrant vessel in such close association with the ureter was a factor in the subsequent narrowing of the ureter. The case at least illustrates the futility of estimating postoperative results until a long period of time has elapsed since operation.

SCROTAL ABSCESS AS A COMPLICATION FOLLOWING VASECTOMY*

BY CHANNING S. SWAN, M.D.†

THE prevention of epididymitis by bilateral ligation and partial resection of the vasa has been practiced for the past three years on the cases for prostatectomy on the Urological Service at the Massachusetts General Hospital. During this time there have been no cases of epididymitis in the cases on which the aforementioned procedure had been carried out. However, in going over the postprostatectomy complications for the past five years, we have noticed that during the past three years there have been one to three scrotal abscesses a year. In the previous

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two years when no ligations were done there were no scrotal abscesses but several cases of epididymitis. Naturally the first assumption would be that contamination of the scrotal wound occurred at the time of the ligation operation or from inadequate dressings before healing took place. During the past six months we have had the opportunity of seeing three cases on our wards with scrotal abscess and it would seem to us that clinically there was considerable evidence that the source of the infection was not from the outside but came down the vas from the prostate or prostatic bed. A brief résumé of these cases follows:

CASE 1. M. G. H. No. 310494. Aged 63. Entered with residual urine of 18 ounces. Cystoscopy showed collar-form prostatic obstruction. Bilateral ligation and partial vasectomy by the House Officer December 5, 1930. One-stage suprapubic prostatectomy, Dr. Swan, December 13, 1930. Pathological report—"Chronic Prostatitis." Patient was sitting up out of bed on 10th day postoperative when he had a moderate secondary hemorrhage requiring packing of the prostatic bed. On December 28, 1930 an indurated mass was felt in the right side of the scrotum under the region of the vasectomy done 23 days earlier. This area was poulticed for two days. On December 31, 1930, a scrotal abscess around the site of the vasectomy was drained by the House Officer. A foul odor such as is caused by the colon bacillus was noted. Apparently this drainage was inadequate because the patient subsequently, within a few days, had to have more extensive drainage, even to splitting of the scrotum. He was subsequently discharged O. K. with good urinary function and complete control.

CASE 2. M. G. H. No. 309971. Aged 45. Entered with acute retention. Cystoscopy showed projecting lateral lobes. Bilateral ligation and partial vasectomy by the House Officer, November 10, 1930. One-stage suprapubic prostatectomy November 19, 1930, by the Resident Surgeon. Pathological report—"Chronic Prostatitis with Slight Hyperplasia." On November 30, 1930, a profuse urethritis was noted. A few days later an indurated mass in the region of the previous vasectomy was noted. On December 7, 1930, an abscess of the scrotum at the site of the left vasectomy was drained by the House Officer. Again there was noted a characteristic odor of the colon bacillus. Patient subsequently made an uneventful convalescence, and has been recently seen in the Out-Patient follow-up clinic. He has good urinary function, complete control, and a hazy urine.

CASE 3. M. G. H. No. 310885. Aged 65. Symptoms of prostatism for seven months. X-ray shows bladder stone and multiple prostatic stones. Cystoscopy shows a horse-collar projection of the prostate. December 30, 1930, suprapubic cystotomy and removal of vesical calculus and bilateral ligation with partial vasectomy by the House Officer. January 9, 1931, was booked for prostatectomy but the operation was omitted because of a temperature of 100° and a purulent urethritis. January 12, 1931, an indurated area on the left side of the scrotum, under the seat of the incision for vasectomy was noted. On the same day there was drainage of the left scrotal abscess by the House Officer with evacuation of two drams of thick, yellow, non-smelling pus. Next day the patient seemed worse. Further investigation revealed a soft prostate and pressure on it caused copious urethral discharge. January 13, 1931, perineal section and incision and drainage of a prostatic abscess and extraction of multiple prostatic calculi, Dr. Swan. The pus from this area was also non-smelling and had a gross appearance similar to that evacuated from the scrotal abscess. The culture showed staphylococcus aureus. Patient improved after this procedure, subsequently had a prostatectomy by Dr. Swan, and made an uneventful convalescence. Pathological report—"Chronic Prostatitis, Prostatic Calculi."

The important facts in all these cases are:

(1) The abscesses were found at the point where the proximal end of the resected vas was ligated.

(2) Superficially all the scrotal wounds were clean and there was no evidence of a stitch abscess in the skin.

(3) All three abscesses occurred in cases which had more than the usual amount of infection in the prostate. Note that the major finding in all three pathological reports was "Chronic Prostatitis", not the usual "Adenomatous Hypertrophy."

(4) Two of the cases had a purulent urethritis a few days previous to or simultaneously with the discovery of the inflammatory mass in the scrotum.

(5) In two of the cases the abscess did not make itself evident for over three weeks from the time of vasectomy; a rather long time for development if the infection was due to contamination from the outside. In the third case, where it came on in two weeks, there was a definitely suppurative condition of the prostate.

(6) Two of the abscesses had the characteristic odor of the colon bacillus with which the urine of both patients undoubtedly was infected. The third had no odor and as stated above conformed clinically to the suppuration found in the prostate, culture from which showed staphylococcus aureus.

In view of all these clinical findings we would like to advance the idea that these infections came down the vas. The patients didn't get an epididymitis simply because the infection couldn't reach the epididymis. In cases where there is an inflammatory prostate and therefore more infection to spread around than in the more common cases where the pathology is chiefly hyperplasia, there probably is enough pus present to sometimes cause the formation of an abscess at the tip of the proximal end of the resected vas. This complication has not been seen in any case where the prostate showed pathologically "Adenomatous Hypertrophy with only mild Chronic Prostatitis." In those cases there probably isn't enough infection there to do it, though there would be enough to cause an epididymitis if vasectomy were not done.

CONCLUSIONS

(1) In cases of prostatism due to an inflammatory prostate the formation of a scrotal abscess at the tip of the proximal end of the resected vas is a possible complication.

(2) It does not occur so often as epididymitis did before vasectomy was practiced.

(3) If recognized early it is easily handled; if neglected, it may lead to a serious suppurative condition.

EXPERIMENTAL TRANSPLANTATION OF URETERS INTO THE BOWEL*

BY JOHN C. ECKELS, M.D.†

Mr. President, Gentlemen:

At the outset I wish to express my appreciation for this opportunity to present certain aspects of experimental transplantation of the ureters into the colon. I consider it a real honor. This work has been in progress for a short time only and, therefore, I beg of you not to be expectant of conclusions—because the number of operations is far too few and the intervals of time since operations are insufficient to warrant such.

It is not within our field this afternoon to discuss the indications for or against the transplantation of ureters. However, should any one of you desire to transplant the ureters of a given patient into the bowel, what technical procedure would you follow? Few other operations demand as precise technical requirements for a good functional result as does this operation. Furthermore, it is the common experience that good functional results are more difficult to obtain in the laboratory than in the clinic, and various theories, into which we shall not go, have been postulated to explain this fact. In most cases the laboratory animal has been the dog.

We have no interest at the moment in all the various methods by which it has been suggested to dispose of the ureter when the bladder must be removed. The most recent and fruitful suggestions are those which have followed the extensive work of Coffey, now well known to us all. The fundamental point of his observations lies in the obliquity of insertion of the ureter through the bowel wall, thus in part at least, simulating the normal anatomical arrangement when the ureter enters the bladder.

Although the oblique insertion of the ureter through the bowel wall is of extreme importance, and must be practiced with care in all such procedures, as we shall discuss this afternoon, still there remain a few technical and physiological problems to consider. These include the prevention of infection in the wound in the bowel wall with subsequent peritonitis, and the protection of the kidney above from immediate and remote infections. Also stenosis of the lower end of the ureter in a certain type of operation is a very serious handicap. Then again, how much pressure should one exert laterally on the embedded portion of the lower end of the transplanted ureter by the closing sutures?

In the dog, the wall of the colon is composed of longitudinal muscle fibers of constant thickness; there are no taeniae or longitudinal muscle bands of greater thickness as in man. This muscle layer is separated with some difficulty from the underlying submucosa which is very thin, extremely tough, and carries the blood vessels. The submucosa on the other hand is practically inseparable from the true mucosa so that the ureter actually lies, for the most part, between the muscularis and the submucosa. In all of our operations upon dogs, we have placed the ureter next to the submucosa for a minimum of 2.5 cm. and a maximum of 4 cm.

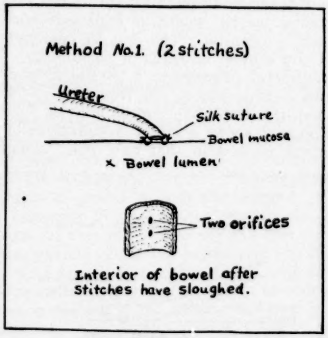

Fig 1.

Figure 1 shows the method (a modification of Coffey's third method) used in our first dog operation. Watery stools appeared in less than twenty-four hours. The dog recovered readily. One or two objections became evident, one that two small apertures with a bridge of mucosa between would result instead of one large aperture, and these in the light of some experimental work done by Sisk, Wear and O'Brien in Madi-

*From the Laboratory of Surgical Research, Harvard Medical School, Boston, Mass., aided by a grant from the DeLamar Mobile Research Fund.

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†Eckels—Assistant Resident on Urological Service, Peter Bent Brigham Hospital. For record and address of author see "This Week's Issue", page 1062.

son, Wisconsin, would possibly tend to become stenosed. Another objection was that unless the sutures produced a compression force upon the end of the ureter equal to or greater than the force of secretion by the kidney, extravasation of the urine through the suture line into the peritoneal cavity would be expected—with resultant peritonitis. The dog so operated did well and showed no signs of peritonitis. (The intraureteral pressure in a normal kidney was shown in two cases to rise from zero to 56 and 59 mm. Hg. respectively in 45 minutes.)

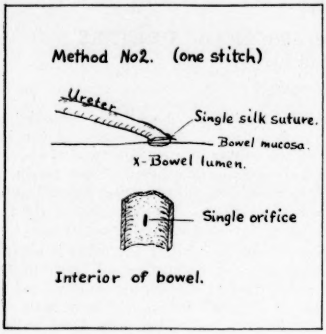

Fig 2.

Figure 2 shows a slight modification of the previous method in that only one "sloughing suture" is used. The end of the ureter is open. This will then produce only one orifice but I believe will not do away with the objection of stenosis. In this connection we propose sacrificing a dog in which the right ureter was transplanted by the first method (Fig. 1); the left subsequently by the second method in which only one suture was used (Fig. 2). The result may be found in the autopsy protocol appended.

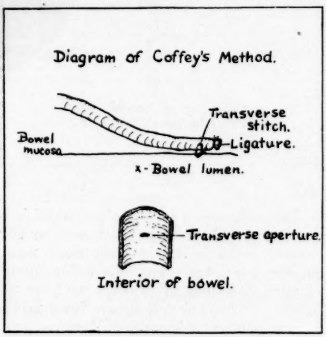

Fig 3.

Figure 3 shows essentially the technique which Coffey has been using in experimental work on dogs during the past year. We have applied this method in operations upon three dogs. So far as I am aware, this method has never been used in the clinic to date. The end of the ureter was tied with No. 000 plain catgut and anchored to the submucosa with silk. The submucosa was carefully scraped away at the point where the "cutting" stitch was placed, because this layer is so tough that it does not permit the stitch to slough into the bowel lumen for several days. A transverse silk suture was passed through the lumen of the ureter and the lumen of the bowel and was tied tightly.

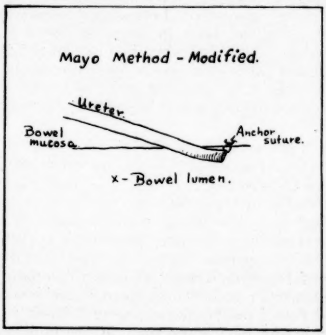

Fig 4.

In two dogs in which the submucosa was carefully scraped away, diarrhea occurred in 48 hours. They were operated upon four weeks ago and have exhibited good health to date. In a third dog, a large and old male, in which no attempt was made to scrape away the tough submucosal layer, diarrhea did not occur until the sixth day. Directly after the appearance of the diarrhea, the dog was given chloralose anesthesia and the abdomen opened. Cultures from both ureters were negative. The intraureteral pressure on the operated side was 20 mm. Hg. and this rose to 29 mm. Hg. in 40 minutes; that on the normal side rose from zero to 59 mm. Hg. in 45 minutes. The left renal pelvis and ureter were markedly dilated. (Specimen exhibited.)

Figure 4 shows the fourth method we have used—essentially, I believe, the Mayo method without the use of a strand of catgut to act as a "urine guide". Our only experience with this was in doing a bilateral transplantation at one sitting on our one and only monkey—an operation which required the use of fine arterial

silk and three and a half hours of time. Ether anesthesia was given. The monkey sat quietly in the corner of his cage for 2 days after which he was as lively as ever. Diarrhea was immediate because both ureters opened freely into the bowel.

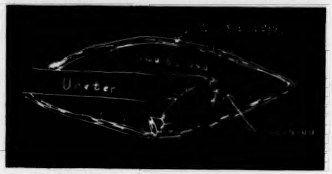

FIG. 5.

Figures 5 and 6 show a method which has gained our attention for the moment. It requires opening of the bowel. It is readily accomplished with very little soiling if bowel clamps are applied above and below the operative area, and if the outer layer of the ureter is attached to the submucosa before a crescent-shaped incision is made through the submucosa and mucosa. This latter is best made with a sharp cataract knife. The end of the ureter, tied with No. 000 plain catgut, is then thrust through the opening and three interrupted su-

FIG. 6.

tures are taken between the submucosa of the distal lip of the opening and the anterior aspect of the ureter. We have so far done only one operation by this method. The operation was on April 15 (9 days ago). Diarrhea appeared on the fifth day. This would probably be more ideal if the ureter would open in twenty-four hours.

Completion of the operation in all of these cases consisted in the approximation of the muscle margins in the lower two-thirds of the incision with No. 000 plain interrupted catgut stitches. The remaining one-third was approximated with "A silk"; then the catgut sutures were inverted with a row of interrupted silk sutures.

The technical points, which we believe important after these preliminary experiments, are:

1. The end of the ureter should protrude into the bowel lumen; this allows less chance for stenosis than does the sloughing suture method of Coffey.
2. The end of the ureter should be closed for twenty-four hours to prevent early ascending infection. (This applies to the non-infected kidney only, as in a normal dog.) Whether this is important, we are not as yet prepared to say.
3. The suture line must not compress too firmly the implanted end of the ureter.
4. A considerable length of ureter should lie next to the submucosa, e.g., in these cases 2.5 to 4 cm.
5. At the completion of the operation the ureter should not be under tension, and should show no sharp kinks.

Autopsy Protocol of Collie Dog No. 103

The dog was given ½ gr. morphine sulphate and 90 mgms. of chloralose per kilo. as an anesthetic. The abdomen was opened and in the process 1-2 small subcutaneous abscesses were opened. The peritoneal cavity showed a few adhesions between the omentum and the fundus of the bladder but no evidence of acute infection. The right ureter was definitely dilated and active peristaltic waves could be seen sweeping downward approximately 4-5 per minute. The left ureter was not dilated. The areas of anastomoses appeared smooth and showed excellent healing. The colon was severed above and below the area of anastomosis and this segment was opened along the mesenteric attachment. With the mucosa of the bowel well exposed, one could distinguish the points at which both ureters opened by the intermittent appearance of urine. The orifices readily admitted a small probe and did not appear to be stenosed. The kidneys and ureters were then removed in bulk together with a segment of the bowel. Section of the right kidney showed a definitely dilated renal pelvis together with some infection and exudate in the lower calices. Section of the left kidney showed an entirely normal renal pelvis which grossly did not appear infected.

SUPRAVITAL STAINING IN NEOPLASMS OF THE BLADDER*

BY WILLIAM C. QUINBY, M.D.†

I WISH to call to your attention very briefly my feeling in regard to bladder neoplasms and their study. You know the attempt which the General Society has made toward the establishment of a Bladder Tumor Registry, similar to the registry of bone sarcoma of the American College of Surgeons. However our American Urological Society Bladder Tumor Registry is, to say the best we can for it, languishing and of no great popularity. There are a good many reasons for this, which I have no time here to discuss. The most prominent reason for the lack of response which the Registry has met lies, I think, in the conviction, shared by many of us, that but little can be learned from the study of fixed tissue in these types of growth. This certainly is my own opinion.

As regards the study of cell growth in general, considerable progress has been made in various places during the last few years. These studies, so far as I am aware, however, have not been applied specifically to tumors of the bladder.

The method of tissue culture in general is the one to which I am referring. I would like to call to your attention a most illuminating review of the whole situation as it exists today, published by Dr. Carrel in one of the recent numbers of *Science* entitled The New Cytology. At the Rockefeller Institute he is making a very extensive study of cell growth of all kinds; normal tissue cells as well as those of neoplasms.

Cells while still living show quite different appearances from those seen after the cell has been subjected to a fixative solution. The method, therefore, which I feel should be used in the study of bladder neoplasms is that of the supravital stain which permits study of the tumor by special staining methods while it is still alive. If we may argue from analogy, I think we may expect to find out a good deal more about bladder neoplasms than we at present know; the analogy which I suggest being the results which this method has given in the study of brain tumors at the hands of Dr. Eisenhardt, who is associated with Dr. Cushing's clinic. She has been studying all types of brain tumor by this method of staining and has accumulated some very striking results. These have been published in a short paper and also in an important communication at the last meeting of the Society of Pathologists and Bacteriologists in Cleveland. She has been kind enough to start the investigation of bladder tumors by this method for me. The work is only in its inception, however. I can show you a print made from the photograph of a small papilloma of the bladder which has been stained supravitally and ask you to note how different the tumor in this print looks from the ordinary histologic picture of the papilloma after the tissue has been fixed and then stained. The difference in appearance might be compared to that between a bunch of grapes and a bunch of raisins. With the supravital staining method one looks at the fresh fruits, by the older methods of fixation one gets the impression of the tissue as one sees a dried-up raisin.

At present I merely wish to note the importance of studying tumors by these methods and hope at some future time to be able to give you further report of its use.

*Read before the New England Branch of the American Urological Association, April 25, 1931.

†Quinby—Clinical Professor of Genito-Urinary Surgery, Harvard Medical School. For record and address of author see "This Week's Issue", page 1062.

CHANGES IN THE URINARY TRACT IN WOMEN*

The Result of Normal Pregnancy

BY E. GRANVILLE CRABTREE, M.D.†

THE heads of the Lying-In Hospital have been for the past ten years so disposed as to give me and my associates an opportunity to study pregnancy. In the beginning it was purely blind struggling along until the institution of the new hospital which is our native institution. Following the establishment of the Richardson House two years ago, at which time the hospital fitted us with a very excellent cystoscopic and x-ray equipment, we have been able to study with more benefit to ourselves the problem of pregnancy. One result which is outstanding has been the firm conviction in my mind that because of the almost universal finding of semi-closed drainage from the kidney, the problem of urinary disease in pregnancy is a different urology.

The same principles that underlie urology in general underlie the treatment of these cases.

One of the conclusions to which we have come

*Read before the New England Branch of the American Urological Association, April 25, 1931.

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as a working basis has been a conception of the effect of pregnancy in two directions. I hope you will allow me to use the term "endocrine", chiefly because I do not know what it means. I mean by endocrine changes which take place in pregnancy, those things which are the showing characteristics of pregnancy in their relation and might possibly affect the urinary tract to some extent. I refer to the congestive changes of the pelvis, those congestive changes extending very little to the upper urinary tract. Of these, the vulval and urethral changes, the urethra becomes congested. In the multipara it is apt to be almost protruding, and the bladder itself is forced down upon the urethra. Postural changes undoubtedly have some bearing, but I think very little. The chief postural change in pregnancy seems to me to be of benefit.

I feel that we do not know the significance of blood vessel hyperplasia except in the surgical measures. In a few instances in which surgery has been necessary for the lower ureter in the course of the 5th to 8th month of pregnancy, it is a detriment to such surgery. You encounter these large vessels which are engorged with blood.

There is a good deal to be mentioned regarding general tissue softening accompanying pregnancy. We see very little effect of that in the cases we have.

Hyperplasia has been mentioned as taking place in the bladder and in the ureterovesical orifice. The answer to that communication is that if these hyperplasias do take place, it makes little difference because the obstructive factor in pregnancy, so far as the urinary tract is concerned, is quickly removed at delivery; quickly in the terms of hours rather than in terms of retrogressive changes.

To my mind, and I hope I can show it to you, the outstanding factors in the production of urinary tract changes in pregnancy are mechanical. Stop and regard the anatomy of the abdomen, not according to the usual textbook methods but as a cavity rounded at both ends, the upper portion of which is composed of the back muscles, the spine and the ribs, with a front wall that is loose and expansive; the lower half of it composed of a rounded basin, the pelvic basin, surrounded by hard, unyielding structures. Conceive also that surrounding this cavity on its most solid side are the urinary tract organs separated only by the peritoneum. Fit into that cavity, point down, the soft, heavy weight of a pregnant uterus. I want you to keep that in mind.

To consider the urinary tract and the effect of pressure, from the bottom up, let us take first of all the bladder. We have been unable to see that the bladder is seriously injured in any way by the normal pressure of the uterus upon it. Bladder deformity of course takes place and that deformity depends somewhat on whether the uterine enlargement comes down somewhat anterior to the bladder or posterior to it. For purposes of cystoscopy, it is better if it comes anteriorly. It gives a smooth, flat trigone in which to reach the ureters. If by chance, as is usually the case in the primipara, it comes down posteriorly, the posterior wall of the bladder is bent over the trigone to make an angulation in which the ureters are seen and only long distant catheterization seems to reach these points. This bladder, because of inability to expand into its globule when filling, results in decreased capacity. Some clinics have mentioned larger bladders. I am not sure that they are not thinking of the larger bladders in disease. I am speaking of the small bladders in normal pregnancies. These bladders do not hold so much as the bladder does when it can expand of its own accord.

Regarding the question of function of the bladder, I believe frequency to be the result of insufficient capacity. It does not in Boston have residual. In Chicago and other geographical centers the bladder has residual. Our bladders do not have residual. The method by which this is determined is to empty the bladder thoroughly by catheterization (we have now done this on hundreds of patients), fill it with 150 c.c. of fluid, give the patient a retiring room in which she can empty the bladder to her own satisfaction and she will bring back 150 c.c. It seems to me that is a fair-enough test.

One of the difficulties we must keep in mind is the effect of delivery upon the bladder. I do not mean the effect of delivery upon a full bladder because at the hospital all cases are catheterized previous to delivery, therefore the things I mention are the effects of delivery upon an empty bladder. Three types of injury may be produced—1, mere congestion or bruising as a result of hours of labor in which the presenting uterus presses the bladder and trigone against the symphysis. If you cystoscope these patients immediately after delivery, you find edema, redness, congestion, not typical of infection but typical of bruising. If, on the other hand, the labor is harder or longer, or forceps have to be used, you find an ecchymotic bladder trigone in which there are definite black and blue spots, showing that the poor bladder, from its position on the firing line, has had a rather hard time. In some instances, where more extensive bladder damage has been done, the bladder will be either pinched by the forceps or will be traumatized so that sometimes, a matter of some days later, sloughing takes place and a vesicovaginal fistula will develop.

So that, as far as the bladder is concerned, it has deformity as a result of pressure, it has decreased capacity caused by insufficient room to fill, it has the banging up which it receives as a result of delivery.

There is one thing which I would like to speak of here, which is the tolerance of these bladders to great degrees of infection, showing none of the characteristic symptoms of cystitis and frequently by cystoscopy showing none of the signs of cystitis although for days and weeks heavily pus- and bacteria-laden urine has been passing through that bladder.

(The changes in the ureters were shown by means of slides.)

Slide 1—Bladder taken in lateral position in the 5th month of pregnancy. The ureteral orifices are in a sharp angle caused by pushing the posterior wall of the bladder directly over the remainder of the bladder, giving this great outpouching.

Slide 2—Ureter. One of the things that must be remembered is that in pregnancy normal women have some degree of back-pressure produced in the kidneys and upper ureter as a result of the pregnancy. This is a patient in the 5th month of pregnancy and shows the degree of dilatation of the ureters and pelvis. It is a characteristic finding that with uroselectan studies the lower ureter seldom fills. The lower ureter we believe to take little or no part in the back pressure changes incident to pregnancy. We have endeavored to show that. As a rule, in uroselectan studies, these ureters let their solution through as soon as it passes the pelvic brim and they are practically always empty. The only exception is in the cases where atony of the lower ureter has taken place and that atony results in extension below the point of obstruction. Therefore, the lower ureter we believe has little bearing on the changes incident to pregnancy. Those people who speak of hyperplasias should take note.

The next portion of the ureter is the portion which extends from the brim of the pelvis up to the point at which the ureter reflects from the peritoneum and travels across to reach the renal pelvis. Enlargement of that ureter produces capacities of 3-4 ounces. On account of the enlargement which takes place in two places there must be kinking. One of the characteristic kinks is to have a redundancy of the ureter coming back at this point. It is nearly always spindle-shaped and the fellow who names that portion of the ureter the lumbar-spindle was correct, so far as pregnancy is concerned.

From the point where the reflection takes place and the ureter travels across, begins the upper ureter. The upper ureter has a hard time because of two things—one is that it is free in the fatty tissue and therefore capable of kinking and the other is that it is crowded by the pelvis when it enlarges and the result is enlargement of the ureter and usually great tortuosity.

Thus, the lower portion of the ureter apparently has little to do with the changes in pregnancy, the middle portion is the chief dilated portion and the upper ureter kinks. Almost always at this point the pelvis is enlarged either intrarenally or extrarenally and it is with some difficulty that you can tell by the pyelograms in pregnancy the previous condition of that kidney before the onset of pregnancy.

We use uroselectan freely in spite of the fact that pregnancy was one of the contraindications mentioned when uroselectan was first used. We have only to be careful not to take too many plates or we may raise a group of deformed children and we are not willing to take the responsibility of that.

From the urologic point of view, the worst thing that can happen to the upper ureters and kidneys is for the woman to have a child a year for four or five years, because the atony produced by one pregnancy has been unable to return to normal before the intervention of a second pregnancy. These are the cases in which the large hydronephroses occur. The answer is a prolonged vacation from child-bearing because, even though they return more slowly, a kidney of this type will return to normal.

The next plate is shown in reference to the statement which I made regarding the fitting of a soft weight of uterus into an inelastic pelvis. The lower portion of the ureter is barely made out in the slide. Gradually tapering into the ureter, at the point where the brim of the atonic pelvis is, is a long, narrow area. We know from repeated pyelograms on these cases taken after delivery that that narrowing disappears.

The next slide has to do with what happens to the one-kidney woman. I shall not go extensively into that question more than to say that of the women who have been referred to our urologic clinic on whom we have done studies, we are brought to the conclusion that once compensatory hypertrophy of the one remaining kidney takes place, these women carry pregnancies on healthy kidneys in exactly the same way and produce the same recoveries. Uroselectan is not quite so useful in these cases because of the tendency of these one-kidney women to push the solution through so fast that you get a poor picture, but the one kidney with its compensatory hypertrophy, if undiseased, seems just as good as two kidneys.

Regarding the rate of recovery—these patients return to normal on an average of four months from the delivery. Functionally, these kidneys differ from the kidneys of normal people very little indeed; they have normal phthalein, non-protein nitrogen and blood chemistry. The reason is that these cases are only temporary back-pressures, of short duration. Extend that same degree of back pressure over a period of time greater than 4-5 months and you would then expect depressed function and the other changes which would come in the prostatic type of case or in the hydronephrotic type of case.

THE EFFECT OF CHANGES DUE TO PREGNANCY ON URINARY TRACT DISEASE*

BY GEORGE C. PRATHER, M.D.†

A FEW of the urinary tract complications occurring in the bladder seen frequently at the Lying-In Hospital, are first, acute retention following delivery. Acute retention in these patients is not particularly uncomfortable but if the nurse reports that they have not voided in a certain number of hours we know the situation has to be relieved. We have not tried injections into the bladder such as glycerine, recommended by certain individuals. These patients are relieved by catheterization. Acute retention is caused by bruising of the bladder at delivery with probably some nerve injury.

The second group of bladder complications we see is in patients whose temperature tends to spring up on the 2nd to 9th day after delivery, temperatures that often pass for a low-grade uterine infection or pelvic phlebitis but which are often due to a bladder residual, either infected or non-infected. Very frequently these are infected. It is a thing that could be easily missed but the members of the house-staff at the Lying-In Hospital are now so trained in that particular type of complication that when one of their patients has a temperature postpartum, the first thing they do is to test the bladder residual by catheter and they immediately feel better about the whole obstetrical situation if they get a bladder residual, especially when it is infected. That bladder residual is simply due to temporary paralysis, I believe, caused by an injury to the bladder and the bladder nerves in the delivery. It varies in amount from 4 to 30 ounces. Some of these patients may void 6-8 ounces—a perfectly good quantity—and yet have a residual of 15-20 ounces. It is sometimes difficult from the standpoint of palpation to detect whether a suprapubic mass only a few days after delivery is subinvoluted uterus or bladder. However, the subinvoluted uterus is harder and has a more definite upper border than these bladders.

The immediate treatment of these patients is intermittent catheterization until there is no more evidence of residual. After it has been demonstrated that the bladder residual is going to continue for 48 hours or more, constant drainage is used. This has definitely cut down the incidence of postpartum pyelitis. We recommend, consequently, handling of these bladder residual cases as follows: They are catheterized, watched carefully for two days for bladder residual—if a bladder residual is present they are intermittently catheterized as often as necessary so long as they are afebrile for a period of 48 hours. If, at the end of that time, there is more than 2 ounces of residual, a No. 18 or No. 20 inlying catheter is left in the bladder for 3-4 days or longer.

Pyelitis is one of the most frequent types of urinary tract complication during pregnancy. The symptoms are more severe, usually, than in the non-pregnant. I believe there is only one reason for that which is simply that we are dealing with an infected hydronephrosis rather than a straight pyelitis. These so-called pyelitis patients show more upper ureteral and more pelvic dilatation than the non-infected cases. The present method of handling such patients consists of the use of fluids and a conservative course of events for 6-7 days. If, at the end of that time, there is no evidence of recession of symptoms, i.e., lower temperature, cystoscopic treatment is employed. We do not recommend constant ureteral drainage, having had rather indifferent success with it three years ago during a period of 6-12 months. Cystoscopic treatment is rational if these patients are interpreted as infected hydronephrosis. The pelves are emptied through the ureteral catheters by suction. That method of determining the residual in the kidney pelvis seems to be quite accurate, provided the catheter is in the pelvis. You get a very small residual if it happens to be in the calyx. These pelvic residuals run from 15 to 200 c.c. After that residual urine has been suctioned off by syringe, the pelves are washed clean with boric acid solution. It often takes 20-25 minutes to irrigate these kidney pelves sufficiently to get them clean. Sometimes we instill 1% silver nitrate in the kidney pelves.

Cystoscopic treatment of pyelitis of pregnancy is an established fact now. From reports of articles written by men who are enthusiastic about constant ureteral drainage, and by comparing their charts with ours that are treated by 1 or 2 cystoscopies, I believe we have them beaten.

From the standpoint of recovery these patients are interesting. Symptomatic improvement is usually prompt. Dilatation of upper ureter and pelvis usually disappears 3-4 months after delivery. The urine sediment frequently becomes bacteria-free at about that same time.

Slide* 1 is of a woman 7 months' pregnant—a potential pyelitis case. The right ureter seems to dilate more than the left. Recently Dr. F. C. Irving mentioned the fact that he believes that these uteri commonly rotate from left to right. This would pull the uterine and ovarian vessels closer to the back side of the uterus and therefore closer to the back side of the ureter, a point which may explain the more frequent dilatation of the right side than the left.

*Read before the New England Branch of the American Urological Association, April 25, 1931.

†Prather—Assistant Urologist, Boston Lying-In Hospital. For record and address of author see "This Week's Issue", page 1062.

*The slides were not presented for publication.

These pyelitis infections do not influence the kidney function, as demonstrated by the N. P. N. and the two-hour phthalein test. It seems to have no effect on them at all.

The next slide shows a primipara at 5½ months. She had been sick eight weeks at home before going to the local doctor. (Many of these patients are dehydrated and in poor condition when they come in but the fluids we get into them in the hospital help considerably.) This patient had a plain plate made which showed a shadow on the right. Pyelogram showed it to be a mesenteric gland, and also a kink of the ureter. She had cystoscopic treatment. Her temperature came down five days later. Many of them will improve miraculously in 24 hours. I interpreted this kink as one possible reason why she did not do so well as the majority.

The next slide is a picture of that same patient four months after delivery—the irregularity at the ureteropelvic junction is gone. The ureter is reduced in size and the kidney pelvis looks well. Lateral view taken at this time shows that the ureter is in good condition. The mesenteric gland is definitely in front of the ureter.

The following slide is a patient five months' pregnant, also with a pyelitis of the febrile type. It shows a very characteristic kink which occurs where the ureter starts through the fatty capsule and seems to be due to a parallel blood vessel that refused to stretch as much as the ureteral wall, resulting in this redundancy of the ureter. This ureter is tending to go quite far laterally but this is an intravenous pyelogram and does not show the lower ureter.

The next plate shows that kidney four months after delivery and it is considerably improved. There is one peculiar thing about these postpartum kidneys—the pyelogram looks normal but there are some conditions about it which differ from a true normal. One is, that you can instill 15-20 c.c. of fluid into that particular kidney pelvis without causing the patient any pain. They are still slightly atonic when it comes to the pain sensation.

Postpartum pyelitis does occur. It is a different problem from the pyelitis of pregnancy due to the fact that the enlarged uterus is not an obstructive factor and it does not require cystoscopic treatment in many instances such as the pure pyelitis during pregnancy.

Another fairly frequent complication is that of stones. We have had single stones in the ureter, single and multiple stones in one kidney, but no experience with bilateral stones during pregnancy. The stone situation in pregnancy I am convinced is different from that in the non-pregnant in several ways. Symptomatically, it does not give symptoms to the extent that it does in the non-pregnant. You must remember that these kidneys and ureters are atonic, consequently if these stones move around they do not cause so much pain. In addition, of course, the problem is complicated by the partial ureteral obstruction caused by the uterus.

As to how they should be handled, there is no set rule. Each one should be decided as an individual problem due to the fact that there are stones of different sizes and occurring in different stages of pregnancy.

This slide shows a woman in the 8th month of pregnancy who had some right lower quadrant pain. We recommend the free use of plain plates simply because they might show shadows which would allow one to know exactly what is present. This is a uroselectan examination and faintly you can see that the kidney is not particularly dilated. In the x-ray you can see some of the uroselectan coming down here. This shows not as a solid shadow, the fluid and uroselectan apparently getting by. We thought it was a canalized stone,—in other words, not causing much obstruction. Hence the decision made in this instance was to let that woman finish her pregnancy provided nothing unusual happened and see what ought to be done about the stone after delivery.

The next plate shows the cystoscopic picture six weeks after delivery. The stone is in the same position, but by comparing the x-ray plates we see that it has increased in size. It is still canalized. She was operated on by ureterotomy and made an uneventful recovery.

The second patient of the stone group was seen in the fourth month of pregnancy, giving a history of having had one ureteral stone, having a little pain, microscopic hematuria, and the stone in a low position. The fourth month meant a long time to worry about whether that kidney was going to become obstructed, hence ureterotomy with removal of the stone was done during the fourth month, giving the woman a good functional result.

The next slide shows one of the kidney stones that occurred during the fifth month—the woman in poor condition, a primipara. Labor was induced, the pregnancy interrupted, and then the stone tackled. Pyelogram shows the stone in the middle calyx. Nephrotomy and removal of the stone was done. X-ray shows the stone to be removed.

One other complication we run into is renal tuberculosis. This is not so frequent as stone. We have taken the attitude that women with renal tract tuberculosis who are pregnant should be interrupted and then the urinary tract tuberculosis treated.

DR. MARTHA A. (HAYDEN) SAWIN

The First Woman Graduate in Medicine to Practice in Boston

BY FREDERICK C. WAITE*

WOMEN in medicine may be traced back to the times of classical Greece, but women who have been permitted to earn a degree in a medical school are found only within the last eighty-two years.

Although we can determine the dates when the pioneer American women physicians received their degrees as doctors of medicine, we cannot be definite as to when American women began to participate in the practice of what is now included in the field of medicine.

Such participation goes back to early colonial times, for nearly all obstetric service was done by midwives until after the middle of the eighteenth century, and the practice of domestic and herbal medicine, common in every neighborhood, was largely in the hands of women.

The agitation for woman's rights, which began in England about 1790 with the writings of Mary Wollstonecraft, soon spread to America and had a definite influence on the entrance of women into medical practice. No definite year can be set when women began to enlarge their field of medical practice, but before the middle of the nineteenth century women physicians were recognized as a fact in Boston and listed in the city directory. Samuel Gregory wrote that Mrs. Jane Alexander, trained as a midwife in Scotland, was practicing medicine in Boston from 1820 to 1845. The name of such a woman occurs in the city directories of 1826, 1833, and 1835, without any designation as to vocation.

Although city directories of Boston were issued from the beginning of the century, not until 1847 did they carry a vocational classification. In that year appear one hundred and eighty-five physicians who are members of the Massachusetts Medical Society, twenty other physicians, four female physicians, and no midwives. This makes the female physicians about two per cent. of the total.

These four female physicians were:—H. K. Hunt, Mrs. E. Mott, Mrs. Richardson, and Ruth Wheeler. Ruth Wheeler appears in the directories of 1839 to 1842 as a doctress. She is not found after 1856. Mrs. Richardson appears only in 1847 and in 1846,—as Mary Richardson, Indian doctress.

Mrs. Elizabeth Mott came from England, shortly before June 1833, with her husband Dr. Richard D. Mott. They practiced jointly until Dr. Mott's death in September 1835. The widow practiced until shortly before her death in October 1847. She was in New York part of the years from 1837 to 1842.

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Harriot Kezia Hunt (1805-1875) conducted a private school from 1827 to 1833. In this her sister, Sarah Augusta Hunt (1808- ?), assisted. From 1833 to 1835 these two sisters studied medicine with Dr. and Mrs. Mott. In October 1835 the Hunt sisters started practice and their names appear jointly in the city directories from 1838 until 1840. In October 1840 the younger sister married Edmund Wright and stopped practice. Coincident with the entrance of Elizabeth Blackwell at the Geneva Medical Institution in 1847, Harriot K. Hunt applied for entrance to Harvard Medical School. The authorities replied that it was inexpedient to admit her. In November 1850 she renewed the application and after a month was promised admission, but before the next session began the privilege was withdrawn. In 1853 the Female Medical College of Philadelphia conferred the honorary degree of doctor of medicine on Miss Hunt. At the same time Dr. Charlotte G. Adams of Boston was graduated there. While, of the early Boston women physicians who held an M.D. degree, Dr. Hunt was the first to begin practice, there were two women holding the degree in practice in Boston before Dr. Hunt received her degree. These were Dr. Martha A. Sawin and Dr. Nancy E. Clark.

Martha Ann Hayden, second child and eldest daughter of Isaac and Martha Hayden, was born at Marlboro, Mass., May 30, 1815. On March 25, 1835, she was married at Marlboro to George Harrison Sawin, a native of that town, but a resident of Boston from 1843 to 1865 and in business there from 1843 to 1863. They had no children.

In the Boston city directory for 1849-50, and "corrected to April 1849" first appears classification headings for both female physicians and for midwives. Of the twelve names under midwives, five are designated as holding the "certificate of qualification" of the Boston Female Medical College. Among these five is M. A. Sawin, at 91 Hanover Street. She is not also listed under the female physicians, as are some of the midwives.

In this same directory under societies is found "The American Medical Education Society for educating females principally for the profession of midwifery and as nurses to the sick." The president was Enoch C. Rolfe and the secretary Samuel Gregory. Under this unchartered society was organized the Boston Female Medical College.

This institution grew out of the pamphleteering of Samuel Gregory against "men midwives". He was its chief sponsor but participated little, if any, in its teaching. In its early years it was not a medical college in fact. No courses in medicine or surgery were given from

1848 to 1852 but only training for midwives. The first term opened November 1, 1848, with twelve pupils. There were two twelve-week terms each year. These began on the first Wednesday of November and of April. One term of twelve weeks constituted the course, at the end of which was given a "certificate of qualification". Having no charter, it could confer no degrees. The announcement dated December 20, 1850, during the fifth term, states that "the pupils have numbered over fifty" and "instruction thus far has been given by a single lecturer, Dr. Enoch C. Rolfe, with occasional assistance by others".

Enoch Carter Rolfe (1812-1873) graduated in 1838 at Bowdoin Medical College. He was a "physician and dentist in Boston, and at one time taught hygiene and physiology at Tufts". He died in Boston March 27, 1873.

Since the city directory of 1849-50 was "corrected to April 1849", it could not have contained the names of those who received certificates of qualification at the end of the second term, which ended in June 1849. It follows that those midwives in the 1849-50 directory designated as holding certificates of the Boston Female Medical College must have received them at the end of the first term in January 1849. Therefore Martha A. Sawin must have been one of the twelve women in the first class of this "college".

After several efforts by Dr. Samuel Gregory to secure a charter for a woman's medical college, on April 30, 1850, he and two others were "made a corporation by the name of the Female Medical Education Society with the purpose of providing for the education of midwives, nurses and female physicians" (Massachusetts Special Laws of 1850, Chapter 259). This act, neither specifically nor by reference, gave any power to confer degrees. However, in 1854, 1855, and 1856 degrees seem to have been conferred, as shown by the names of graduates in the city directories of those years with the initials M.D. after them.

Due to lack of funds and inability to form a faculty, a medical course was not instituted until the autumn of 1852, Dr. Rolfe meanwhile carrying on his course of training for midwives. The faculty of 1852-53 was in part borrowed from the Female Medical College of Philadelphia. The first class of four women was graduated in 1854, probably in February.

By legislative act of May 28, 1856 (Massachusetts Special Laws of 1856, Chapter 199) the name of the Society was changed to the New England Female Medical College and the directors made a board of trustees and given the power "to confer the usual degree of doctor of medicine". This degree was conferred upon ninety-three women between 1854 and 1873, when the College was incorporated into the Medical Department of Boston University, which became the first coeducational medical college in New England, with the exception of the two years in the fifties when the Worcester Medical College admitted women.

The school in Boston was not the first chartered woman's medical college in the world, as is sometimes stated. On March 11, 1850 a legislative act in Pennsylvania incorporated the Female Medical College of Philadelphia. A faculty was soon formed and instruction began on October 12, 1850. A second session began in September 1851 and the first class of eight women was graduated December 31, 1851. Of this class, usually called the class of 1852, Dr. Martha A. Sawin was a member.

When Dr. Sawin returned with her diploma to Boston, early in January 1852, she was the first woman holding the degree of doctor of medicine to practice in New England. She took up her residence and office at 60 Temple Street, where she remained until her death.

Although Dr. Sawin was the first woman with the medical degree to practice in New England, she was not the first woman of New England birth to receive this degree. Dr. Lydia Folger Fowler and Dr. Rachel Brooks Gleason preceded her in this distinction.

The first woman to receive the degree of doctor of medicine in the United States was Dr. Elizabeth Blackwell (1821-1910). She was born in England and her family were residents of Cincinnati, Ohio, when, in 1847, she entered the Geneva Medical Institution at Geneva, New York, where she gained her degree January 23, 1849. After a year's study in France and England, she practiced in New York City from 1850 to 1869, and then went to London, England.

In 1849 was established at Syracuse, New York, the Central Medical College, an eclectic institution. In its first session it had a group of women students and was the first medical school in the world to adopt a coeducational policy, since the admission of Miss Blackwell at Geneva was an episode that was not repeated and did not become a policy.

In March 1850 the Central Medical College moved to Rochester, New York. Here on June 5, 1850 was graduated Mrs. Lydia Folger Fowler, the only woman graduated by that school in that year, and the second woman to receive the medical degree in America.

Lydia Folger, daughter of Gideon and Eunice (Macy) Folger, was born in Nantucket, a descendant of Peter Folger, who settled there in 1663. In 1844 she was married to Lorenzo N. Fowler, best known as one of the two brothers whose name was connected with phrenology.

Also at Central Medical College, on February 20, 1851, were graduated Miss Sarah Read Adamson of Philadelphia,—who, as Dr. Sarah A. Dolley (1829-1909) practiced medicine in Rochester, New York, for more than fifty years,

—and Mrs. Rachel Brooks Gleason (1820-1905) of Elmira, New York. These two were the third and fourth women to receive the medical degree.

Rachel Brooks was born at Windhall, Vt. After securing a good education and teaching school two years, in 1844 she married Silas Orsemus Gleason, a graduate in 1844 of Castleton Medical College. The Drs. Gleason conducted, for more than half a century, a sanitarium at Elmira, New York, which is still conducted by members of their family.

While both Dr. Lydia Fowler and Dr. Rachel Gleason were natives of New England, neither ever practiced outside of New York State. They, with Dr. Martha A. Sawin, were the first three New England women to attain the degree of doctor of medicine, but a fourth, Dr. Nancy E. Clark, was soon to join them in this distinction.

Dr. Martha A. Sawin died at her residence, 60 Temple Street, Boston, on August 30, 1859, of scrofula, at the age of forty-four years and three months, and was buried at Marlboro.

No record has been found to indicate that her medical career displayed any outstanding capability or service, but as a member of the first class to receive the certificate of the Boston Female Medical College, and as the first woman holder of the degree of doctor of medicine to practice in New England, she deserves historical record as a pioneer in the field of women in medicine.

TWO CASE REPORTS OF LATE RECOGNITION OF SYPHILIS

BY WILLIAM J. MAC DONALD, M.D.*

THE following cases are reported in order that those of us who are sufficiently humble may acquire an added iota of wisdom.

CASE I. Mr. J., aged 28, acquired gonorrhea in May, 1931. He was treated for this malady and recovered about the same time as a penile sore and some venereal warts appeared. The warts were removed but the penile sore was disregarded except for local treatment. As time went on the sore failed to disappear, and the patient neglected treatment until October, when I first saw him. The Wassermann, Hinton and Kahn being positive at this time, he was informed of the diagnosis and accepted the usual treatment.

CASE II. Miss K., aged 28, saw me toward the end of July. Upon her upper lip was a raised, hard, painless, pea-size nodule with slight ulceration; submental adenitis and an early secondary maculide. A dark field revealed the spirochaeta pallida, and the Wassermann was positive. The diagnosis was early secondary syphilis.

The moral here is:

(1) Case I and Case II are personal friends. I therefore, venture to assume that Case II was innocently infected by Case I. Had a dark field examination been done on Case I, the diagnosis would have been immediately clinched, and Case II would have been saved needless suffering. Others with whom Case I has presumably been in contact might, at this moment, be afflicted with syphilis insontium and be direly in need of treatment.

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RESULTS OF SURVEYS OF THE PUBLIC HEALTH CONTROL OF MILK SUPPLIES IN 152 AMERICAN MUNICIPALITIES WHICH HAVE ADOPTED THE MILK ORDINANCE RECOMMENDED BY THE PUBLIC HEALTH SERVICE

(Continued from Page 1033)

been expensive to the dairy industry because of the constant necessity of readjusting methods and equipment to new requirements, not all of which have a sound public health basis. Nor can there be any doubt that the lack of uniformity in local dairy equipment requirements has increased the cost of dairy equipment. When a manufacturer is able to put on the market standardized equipment he can sell it to the dairymen at a lower price than is possible if he must change the design and construction for each of the many different requirements of local health officers.

The Public Health Service has recently made careful "before and after" surveys of the milk sanitation conditions of 152 of the 444 cities which have thus far adopted the Public Health Service Milk Ordinance. These surveys have disclosed the following facts:

(1) The raw milk supplies of the 152 municipalities showed a rating of compliance with the grade "A" raw milk requirements of 64% before the adoption of the ordinance, and 91% after a period of enforcement ranging from several months to six years.

(2) The pasteurized milk supplies of the 152 municipalities showed a rating of compliance with the grade "A" pasteurized milk requirements of 62% before the adoption of the ordinance and 87% after the adoption of the ordinance.

(3) The percentage of milk protected by pasteurization, the most powerful of all of our epidemic preventive measures, increased from 33% to 45%.

(4) Milk consumption increased about 21%.

Only one of the 444 cities which have thus far adopted the Public Health Service Milk Ordinance has repealed it, and that city has since reënacted it. This fact demonstrates the milk control stability provided by its adoption.—*Bulletin of the United States Public Health Service.*

CASE RECORDS
of the
MASSACHUSETTS GENERAL HOSPITAL
ANTE-MORTEM AND POST-MORTEM RECORDS AS USED IN WEEKLY CLINICAL-PATHOLOGIC EXERCISES

EDITED BY RICHARD C. CABOT, M.D.
F. M. PAINTER, A.B., ASSISTANT EDITOR

CASE 17481

ACUTE INFECTION AS CAUSE OF DEATH IN CIRRHOSIS

MEDICAL DEPARTMENT

PRESENTATION OF CASE

DR. CHESTER M. JONES: *First admission.* This patient was a girl fourteen years old who was admitted to the Surgical service in February, fourteen months before her final admission, with a diagnosis of questionable chronic gall bladder disease.

The story was that she had been in good health until a year and a half before admission. At that time she began to have dull epigastric pain which radiated under the costal margin on both sides, not more on the right than on the left. The pain was never severe; it was rather a sore feeling. There was no relationship between meals and the pain. She was occasionally nauseated, but there was no association between the nausea and the pain and no vomiting. Jaundice, so-called, was supposed to have developed about a year and a half before she came to the hospital and persisted with varying but never extreme degrees of intensity until the winter before admission. During that winter she had what was called pneumonia and did not return to school until after Christmas. The pain and jaundice did not seem accentuated by acute infection. During the last three weeks of January she had a severe cold with morning sore throats and unproductive cough, a nasal discharge, and definite constipation, which was not ordinarily present. During the week before admission she was aphonic. This had never accompanied previous respiratory infections. There was no chest pain. Her appetite was good. Her stools were lighter than normal, although not definitely clay colored. She had been in bed for three weeks before admission. Two or three years before admission she had an aural abscess and since that time had had occasional pain in both ears and some discharge, treated by syringing.

The rest of the history is essentially negative except that she had a story of repeated colds or upper respiratory infections for many years.

On admission she was described as being a girl of striking appearance, lying quietly in bed and talking in a whisper. Her lips were deep red, with small herpetic lesions. Her nasal passages were red, her sclerae yellow. She coughed at intervals. The extremities were extremely puffy, cold and questionably cyanotic. Both ears showed a yellowish-red malodorous discharge. The septum of the nose was deviated to the left with almost complete obstruction of the left posterior passage. Chest expansion was limited. There was dullness in each chest with flatness at the bases, with diminished signs to auscultation; as a matter of fact the breath sounds were absent at the extreme bases. We thought there was fluid in each pleural cavity. Because of the continual aphonia it was impossible to tell whether there was tactile fremitus or not. The left border of dullness of the heart was out in the anterior axillary line. The impulse was diffuse and heaving. There was a loud rough early systolic murmur without any diastolic. The abdomen appeared full, especially in the flanks. There was fluid wave and shifting dullness. There were no definite masses. The liver and spleen were not felt, although it was thought that the liver was palpated about 3 centimeters below the costal margin on inspiration. There was pitting edema of the extremities. There were small glands in the left posterior cervical region thought to be due to her chronic condition.

In other words, here was a girl of fourteen with slight jaundice, ascites, pleural effusion, peripheral edema and a story of jaundice going back for a year and a half, with repeated respiratory infections and one attack of what was called pneumonia.

She was definitely anemic. The red blood cell count was 3,500,000, the hemoglobin 60 per cent, the white cell count 14,000, with a normal differential count. Her stools were negative and were brownish in color. A Hinton test was negative. She had a bromsulphalein test done while in the surgical ward which showed 45 per cent retention of the dye. It was repeated with a similar result.

At first the diagnosis on the Surgical side was in question, but it was felt after a while that she probably had cirrhosis of the liver. I was asked to see her a day or so after she entered. I thought she had infectious cirrhosis, that is in the sense that it was associated with infections but not the hypertrophic biliary type. I thought it was unusual that it did not start, as it commonly does in young people, with a definite sharp onset and increasing jaundice from the beginning.

She was transferred to the Medical side, where further studies confirmed the diagnosis of cirrhosis, or at least confirmed the diagnosis of intrahepatic disease, and I thought that she did have cirrhosis of the liver. A week after admission the bromsulphalein test was repeated. It showed only 35 instead of 45 per cent retention, showing that she had improved somewhat.

The jaundice, which was associated with a van den Bergh of 9 milligrams of bilirubin in the blood at admission, ten days later had diminished to 4.2. Four days later she was clinically better. The abdomen was not tapped.

There is one interesting comment which runs through all the notes of the visiting men who saw her on both the Surgical and Medical sides. Dr. Baker, who saw her on the Medical side, went into the story of pneumonia which she was supposed to have had some months before admission to the hospital and characterized it as "so-called" pneumonia. I think it is perfectly fair to raise the question whether or not it was pneumonia. In cirrhosis of the liver pleural effusion or pleural inflammation is not at all uncommon. If she had cirrhosis I think it is entirely possible that she may have had an acute respiratory infection which aggravated the liver condition and was associated with pleuritis and pain in the chest and signs in the chest and which may have been called pneumonia. I have seen several cases that have done that in the past few months. I believe it is more common than we think. Pleurisy with effusion is entirely consistent with cirrhosis of the liver.

She left the hospital a little improved, to go home and live at an invalid level. The discharge diagnosis was cirrhosis of the liver.

History of interval. I saw her from time to time outside until last spring, a year and a half later. During that time she had had intermittent jaundice, exacerbations in the intensity of the jaundice depending almost entirely on recurrences of upper respiratory infections. Early in the spring she noticed that her abdomen began to become larger. She decided to come into the hospital to see if we could do anything for her.

Second admission. She was readmitted April 8. At that time her abdomen was "tight as a drum". "She was fairly well developed and nourished, lying propped up in bed. The skin and sclerae were frankly jaundiced." In other words the jaundice was a good deal more marked than at the first admission. The heart was difficult to check up, but we did not feel that it entered into the picture very largely, although she may have had a valvular involvement from some old rheumatic infection that had not been brought out in the history. The abdomen was enlarged. The superficial veins were prominent. There was shifting dullness and it was impossible to feel the liver or the spleen, probably because the abdomen was so full. She did not have edema of the extremities. She did have, when she was up and about, some swelling of the feet. She had her chronic ear condition, as before.

Laboratory work showed anemia of about 3,250,000 to 3,500,000. She had a dye retention test of 35 per cent, the same as it had been a year and a quarter before. A van den Bergh was 5.1 milligrams per 100 cubic centimeters.

That is essentially the story except for the very end of the history.

Though we had given her salyrgan before, and sometimes noticed that it was followed by slight temperature, salyrgan was again given, at first without response. She came in weighing 60 kilograms. She began to get satisfactory diuresis with salyrgan and ammonium chloride on full dosage, and that plus rest in bed brought down the edema so that by April 15 she had lost 6 kilograms in weight. Ascites was still present, but she was up and about a little each day. Her jaundice had practically disappeared and she felt well for the first time in months. She had a sense of well-being as long as she remained in bed or in a chair, although on admission she felt sick and nauseated and was a good deal of a chronic invalid.

We felt at the end of a month that it would be well to go after any possible infection that might be causing an exacerbation of the liver infection. She was seen by a throat consultant. As a matter of fact about the time we were considering doing something she had what she called a "cold", and had an acute flare-up of her chronic ear. A paracentesis was done with symptomatic relief.

While she was more comfortable after the paracentesis, there were several things of interest. She had been having a good deal of ammonium chloride. She had a carbon dioxide combining power that was down to 28 volumes per cent at about the time this infection hit her. She was given glucose, fluids and alkali in large amounts. We felt rather uneasy about her. Following the paracentesis, however, the temperature flattened out to 99.5° rectal until the day before death. Then she became rapidly very much worse in spite of all attempts at treatment, including large amounts of alkali. Hyperpnea was striking. In spite of the fact that the jaundice did not increase she became definitely worse. She had bleeding from the nasal mucosa. She vomited bloody material, probably from the gastric mucosa. Three days after the onset of the acute otitis media, in spite of the fact that the ears were successfully drained, she died, going downhill very rapidly towards the end.

Clinical Discussion

Dr. Jones: It seems to me that she probably represents a very severe case of cirrhosis on an infectious basis, not the hypertrophic type, but rather the type that tends to atrophy, with ascites as the outstanding feature as well as jaundice, and the type that is very frequently tipped over from a fairly satisfactory to a very unsatisfactory condition or even to a fatal outcome by superimposed acute infection. I think infectious cirrhosis occurs more frequently in young people, who may go from a year to a good many years with varying depths of jaundice, and who may or may not show ascites. I have seen a

group of ten or fifteen cases during the past ten years, some of which I am still following.

CLINICAL DIAGNOSES (FROM HOSPITAL RECORD)

Infectious cirrhosis of the liver.
Otitis media.
Acidosis.

ANATOMIC DIAGNOSES

Toxic cirrhosis of the liver.
Bronchopneumonia, influenzal type.

PATHOLOGIC DISCUSSION

DR. TRACY B. MALLORY: Autopsy showed, as Dr. Jones predicted, a totally different picture from the one in the preceding case, Case 17462.* Instead of a big liver weighing over 5000 grams we have a distinctly small liver weighing barely 800 grams. Most of the liver substance is made up of gross nodules 1 to 2 centimeters in diameter separated by large areas of scar tissue over one centimeter in width. The general picture of the liver is not very different from that of acute yellow atrophy except that the changes are more chronic.

There were a few other interesting findings at autopsy. She had what one would expect with this type of cirrhosis, ascites, large esophageal varices and an enlarged spleen.

The other important findings were complete surprises. The lungs showed an unusual type of bronchopneumonia which is perfectly typical of the so-called influenzal type of pneumonia which was described during the epidemic of 1918. There is comparatively little exudation of fibrin and polynuclears. In contrast one finds a great deal of serum and many red cells in the alveoli. The characteristic feature is a hyalin necrosis of the alveolar walls which is almost diagnostic, though some of the war gases are said to produce a similar lesion. We happen to have had within a period of a month or so during the latter part of April and the beginning of May five cases of exactly the same type of pneumonia. Incidentally we failed to grow influenza bacilli from any of them.

Finally we found acute inflammation of the cecum. It was injected and covered with fibrin. The wall was very much thickened. It was a true typhlitis with a perfectly normal appendix. Whether one can possibly check that up with so-called "intestinal influenza" is open to conjecture.

DR. JONES: In giving the history of the last seventy-two hours I should have said that Dr. Short found evidences of consolidation at the left base two days before death, so that we did have signs of pneumonia at that time.

I should like to emphasize once more the frequency with which pleural manifestations occur in cirrhosis of the liver. I think it is not uncommon. The interesting thing there is that apparently she was doing fairly well on as few liver cells as she had, and I think she would probably have continued to do well for some months longer provided she had not developed this acute infection.

I have seen in the past three years several of these cases. One of them died very much as this patient did in the course of about forty-eight hours with pneumonia. The patient was previously doing very well indeed. Another, who was also doing very satisfactorily, died in thirty-six hours after a bad reaction to vaccine dying with intense jaundice which came on suddenly. Of course the prognosis was relatively bad anyway, although many cases go on for some years. Acute infections are usually the cause of death unless hemorrhage from esophageal varices intervenes.

DR. ALFRED O. LUDWIG: Isn't this picture very similar to the one you get in acute yellow atrophy when they live long enough to recover completely?

DR. MALLORY: Yes. We rarely, of course, get a past history suggesting acute yellow atrophy. Probably these cases represent more or less the same mechanism, only instead of the necrosis occurring with dramatic suddenness all at once it recurs repeatedly with small amounts at a time. Then regeneration takes place over a period of months or years, until later another attack leads to further necrosis.

DR. JONES: It probably represents the end stage of what may have been going on in a case such as we saw this morning in the Medical ward,—a patient who has had acute yellow atrophy and recovered.

DR. EDWARD D. CHURCHILL: What is the correct name for this type of cirrhosis?

DR. MALLORY: My father calls it toxic cirrhosis. That seems to be more or less accepted. I think it is a little misleading, but so is every other medical term.

Somebody mentioned alcoholic cirrhosis. This liver does not look like the liver of an alcoholic. In the early stages of alcoholic cirrhosis we have a huge pale fatty liver. It may be smooth or finely granular. In the later stages of alcoholic cirrhosis the liver becomes granular. We never, however, in alcoholic cirrhosis get nodules so big as this. The nodules run from 1 to 4 millimeters in diameter. In this case some of them ran up to 2 centimeters in diameter. There is a very definite difference, which it is almost easier to make out in gross than microscopically.

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CASE 17482

THE IMPORTANCE OF A HISTORY IN A CASE OF HEMIPLEGIA AND APHASIA

Medical Department

Presentation of Case

Dr. Milton L. Miller*: This patient was a forty-five year old Armenian man who entered September 28 complaining of weakness of the right side, and aphasia. Our history was obtained from his second wife and was limited by language difficulty.

Five weeks before admission he suddenly became aphasic and had weakness of the right arm and leg. This lasted one hour and then disappeared. Three weeks before entry he had a tooth extracted in the Dental Outpatient Department. Eleven days after that he again became aphasic and had right-sided weakness first of the face, then of the arm and five days later of the leg. He was brought into the hospital because of the weakness of the leg.

On examination he showed almost complete aphasia. He was cloudy mentally. He showed right-sided weakness and increased reflexes of the right leg and arm. His tongue was deviated to the right. There was some paralysis of the external rectus on the right. There was a good deal of peripheral sclerosis, slight enlargement of the heart and sclerosis of the retinal vessels. The discs were clear.

Blood studies showed a polynuclear count of 80 per cent. A Hinton test was negative. The urine showed the slightest possible trace of albumin. A lumbar puncture done on the day of entry showed an initial pressure of 210, no cells, total protein 75, no evidence of block. Another lumbar puncture done on October 9, the day before death, showed an initial pressure of 400, no cells, total protein 48.

He was very drowsy and showed no improvement except for one day six days after admission. He gradually became more drowsy. On October 10 he became comatose and died.

Clinical Discussion

Dr. Chester M. Jones: When this man was seen in the Emergency Ward we were unable to get a complete history. He was not able to tell us anything himself. The immediate picture was one that suggested as the best probability a rather large cerebral hemorrhage. We did not get until a little later the story that some weeks before admission he had had real trouble which had been gradually increasing. With the later story brain tumor had been considered, but there were no signs except increased intracranial pressure as shown by the lumbar puncture. There were no changes in the discs and no localized signs whatever except for the complete hemiplegia.

*Recently senior interne on the East Medical service.

Clinical Diagnosis (from hospital record)

Cerebral accident?

Anatomic Diagnosis

Glioma of the left cerebral hemisphere.

Pathologic Discussion

Dr. Tracy B. Mallory: The history obtainable at the time of this man's entry to the hospital was of course very inadequate. With the complete history, especially what we learned later on from the patient's own physician, it became fairly obvious that there had been definite symptoms for at least six months. This pointed the differential diagnosis distinctly in the direction of cerebral tumor. Up to that time the disease had appeared to be of such rapid onset that other things seemed more probable. Cerebral hemorrhage naturally ranked first in the minds of most of those who saw him, but we have had a sufficient number of cerebral abscesses following tooth extraction to have made that also a possibility worth considering.

Autopsy did show a tumor, a large glioma on the left side of the brain, where it should have been from the physical findings, abutting very closely the fissure of Rolando. It could easily account for his aphasia.

This is an example of a very interesting and important group of cases, because if you are dealing with any person of fifty or upward the probability is much greater in favor of hemorrhage than abscess or tumor. The operative risk is apt to be high, and yet there is a sufficient possibility of a tumor, which surgery might help, so that an accurate diagnosis is important. In this particular case the size and character of the tumor were such that surgery would have been of no avail.

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A NEW TRIBUTE TO HARVEY

So complete was Harvey's demonstration of the circulation of the blood and so detailed were his experiments that a new reading of his book is sure to bring out material heretofore undiscovered. Recently Dr. F. H. Garrison has reviewed Harvey's "De motu cordis" in connection with a history of the circulatory system*. Garrison points out that Harvey not only demonstrated every point of the circulation by actual vivisection and experiment but was the first to elucidate also the apex beat, the possibility of "fibres spirally arranged", the mechanism of the heartbeat and of physiologic heart-block, venous blood-pressure, resuscitation of a stopped heart by a perfusion experiment, the pulse as an expression of the pumping action of the heart, the heart sounds as a species of intrathoracic pulse, the effect of physiologic, dietetic and psychic factors upon cardiac output and velocity of the blood-current and the relation of the pumping action of the heart to virtual arterial blood-pressure. In addition, there are hints by Harvey in regard to the lacteal vessels, the cutaneous absorption of drugs, valvular incompetence, vasoconstriction and vasodilatation and possibly of auricular fibrillation. With all of these points of the circulation elucidated by this extraordinary man, is it any wonder that Garrison writes as follows: "To open the *De motu cordis* is to enter the laboratory of the ablest investigator of comparative anatomy and physiology since Aristotle and Galen. To read it is like reading Beaumont's book of experiments on gastric digestion. Everywhere, we are conscious that Harvey wishes to abandon speculation and actually tries to make us see how the heart works, how the blood flows in vivisected animals, even as Beaumont visualizes the interior of the stomach *in situ* through his accidental experiment in physiological surgery. Applying his plain, practical common sense to Galen's postulates, Harvey proceeds, step by step, to demonstrate every point he makes by actual vivisection and experiment" . . . "Harvey's demonstration, then, takes us into an entirely different atmosphere from the closet and studio speculations of his Spanish and Italian precursors. We are in the full current of essentially modern laboratory experimentation, with no whirligig proofs, but extraordinary leaps forward into the medicine of the future." Finally Garrison concludes that Harvey's work "covers many of the most important advances made in recent medicine and does but confirm his position as the founder of modern experimental physiology and as one of the great leaders of European thought".

*An Outline of the History of the Circulatory System. Editorial by F. H. Garrison, Bull. New York Academy of Medicine 7:781, October 1931.

PAYING YOUR SICKNESS BILLS

IN a book with the above title, Michael Davis* has collected a large array of statistics regarding the amount of illness from which the people of this country suffer and the price which they have to pay for its care. As a corollary to the sickness problem, he discusses the subjects of hospital accommodations and hospital charges, the growth of specialism, the evil of fee-splitting, and the matter of doctors' fees.

From the facts which he has gathered it is evident that the situation is far from satisfactory. In the first place, owing largely to lack of means, from 25 to 30% of all cases of serious illness receive no medical care. The percentage of cases of non-disabling illness that goes without the services of a doctor is much larger. The chief cause for neglect in sickness, Davis believes, is insufficient funds. The significance of this is easy to understand when one appreciates the fact that even in New York City two-thirds of all families have annual incomes un-

*Paying Your Sickness Bills. By Michael M. Davis, Director for Medical Service, Julius Rosenwald Fund. Published by The University of Chicago Press, Chicago, Illinois. 263 pages. Price $2.50.

der $2500. Of forty-five million persons in this country who are occupied and earning,

2% have incomes over $5000.
5% have incomes $3000 to $5000.
14% have incomes $2000 to $3000.
35% have incomes $1500 to $2000.
30% have incomes $1000 to $1500.
14% have incomes less than $1000.

The payment of sickness expenses on the budget principle, as Davis shows very clearly, "fails before the patent fact that sickness is neither a regularly recurring, nor a predictable expenditure". It is almost impossible, human nature being what it is, for people to lay aside money for sickness which they fondly trust will not befall them, when so many other attractive ways of spending are constantly before them.

It is hardly to be expected that adequate medical care of two-thirds of our people should be given by charity hospitals, whether these are supported by taxation or by private subscriptions. Nor is the "sliding scale," as applied to professional fees, a satisfactory solution. In Davis' opinion, "the sliding scale hits the medical profession (1) by reducing the demand for service because uncertainty of price deters consumers, (2) by a flavor of charity which also deters some prospective patients, and (3) by sliding fees downward for many doctors and upwards for only a few". "The charity principle does not and cannot be expected to work satisfactorily today. Neither charity straight, in the form of free care, nor charity in relative terms, in the form of the sliding scale, is a sound principle on which to guide the care of sickness among self-respecting American citizens."

Davis believes that the answer to the problem is to be sought in two directions. First, the unnecessary overhead expenses so frequently met in medical practice must be done away with. This object, he thinks, may be accomplished by organization of the medical profession into groups. This will tend to check the evils of specialism, which, according to Davis, are waste of time, undue expenditure of money, and confusion of mind. As an example of such organization, Davis points to the Baker Memorial Unit of the Massachusetts General Hospital. The second essential is the distribution of medical expenses by means of budgeting by groups instead of by individuals. This can best be accomplished, Davis thinks, through groups of employees, members of university faculties, and other groups, the members of which have a common interest.

Whether, even under this system, there would be money enough to pay for the increasing expenses of modern medical care, is an open question. Probably three quarters of a billion dollars is spent annually on useless or harmful medicines, quacks, healers, and the unnecessary overhead in medical practice. Davis believes that by public education much of this wasted expenditure might be diverted to help pay for useful methods of health service.

One cannot read Davis' book without being impressed by the soundness of the author's views on the economics of medical care. His figures are convincing, his point of view is entirely dispassionate, and his conclusions are logical. All who have thought at all upon this subject are aware of its profound importance, not only to the population at large, but to the future of medicine as well. The medical profession must be willing to lay aside preconceived opinions and long-cherished ideas. Its members must not only be ready to coöperate in bringing about the necessary reforms, but must take the initiative in suggesting remedies for existing evils. The purpose of medicine is to preserve the health of the public, and in doing this, selfish interests and petty prejudices must be ruthlessly swept aside.

MIDDLE AGE

THE United States Public Health Service which, like the watcher over Israel, neither slumbers nor sleeps, has taken cognizance of and issued its advice on the life of the middle aged—that great body of men and women, past the period of youth's extravagant activity, who must trim their sails to a keener wind and ballast their vessels to the buffeting of a more tempestuous sea. When is middle age? We cannot say, for it varies with the individual; with the amount of vitality with which he was originally endowed and with the degree to which he has husbanded his mental and physical endowment. It is trite, but it is true to say that a man is as old as his arteries or as old as he feels. Blessed is the youth of sixty; unhappy the spendthrift of thirty-five who has dissipated his most priceless heritage; that of health!

Emerson, as we reckon age, was still a young man when he wrote Terminus.

It is time to be old,
To take in sail:—
The god of bounds,
Who sets to seas a shore,
Came to me in his fatal rounds,
And said: 'No more!
No farther shoot
Thy broad ambitious branches, and thy root.
Fancy departs: no more invent;
Contract thy firmament
To compass of a tent.
There's not enough for this and that,
Make thy option which of two;
Economize the failing river,
Not the less revere the Giver,
Leave the many and hold the few.

Middle age, whenever it comes, may be a sad time of life for us if we allow it to steal upon

us unawares. It is the early fall of our year of life and there is sadness in the fall, for it foretells the chill of winter. It is not the way to look upon it; it should be viewed as the harvest season when we begin to reap what we have sowed in the springtime of youth and cultivated in the summer of young manhood; it is the period of maturity when we are filling our bins with the fruits which we shall enjoy during the winter of our age. There are not seven ages of man. There are four, which are represented by the seasons of the earth, each of which has its tasks and its duties and its pleasures.

Fortunately for the healthy-minded and healthy-bodied man, the adjustment of middle age is made almost unconsciously. It is not that we feel older, but that the generation behind us seems younger. We could turn cartwheels if we wished so to do, but there seems to be no sense in it. We have learned moderation and conservation at a time when there are many years of useful activity ahead of us. Our body cells have begun to be replaced by connective tissue, but the process is slow and the downgrade may be as pleasant as—indeed pleasanter than—the uphill struggle.

As the bird trims her to the gale,
I trim myself to the storm of time,
I man the rudder, reef the sail,
Obey the voice at eve obeyed at prime:
'Lowly faithful, banish fear,
Right onward drive unharmed;
The port, well worth the cruise, is near,
And every wave is charmed.'

THIS WEEK'S ISSUE

CONTAINS articles by the following named authors:

SABIN, GEORGE M. B.Sc., M.D. University of Vermont College of Medicine 1900. F.A.C.S. Professor of Clinical Surgery, University of Vermont College of Medicine. Attending Surgeon, the Mary Fletcher and the Bishop de Goesbriand Hospitals and the Fanny Allen Hospital, the last-named in Winooski. His subject is "Some Interesting Fractures of the Spine." Page 1031. Address: Burlington, Vermont.

GRAVES, ROGER C. A.B., M.D. Syracuse University College of Medicine 1918. F.A.C.S. Urologist to the Carney Hospital. Genito-Urinary Surgeon to the Pondville Hospital. Member of Consulting Staff of Brockton, Quincy and Winchester Hospitals. His subject is "A Case of Bullet Wound of the Kidney." Page 1034. Address: 12 Bay State Road, Boston.

CROSBIE, ARTHUR H. A.B., M.D. Harvard University Medical School 1908. F.A.C.S. His subject is "Remarks on Procedure in Cases of Urinary Obstruction." Page 1035. Address: 520 Commonwealth Avenue, Boston.

RILEY, AUGUSTUS. A.B., M.D. Harvard University Medical School 1907. F.A.C.S. Assistant Professor of Genito-Urinary Surgery, Harvard Medical School. Visiting Surgeon in Urology, Boston City Hospital. Urologist, Malden Hospital. Consultant in Genito-Urinary Surgery, Symmes Arlington Hospital. Consultant in Genito-Urinary Department and Urologist, Cancer Department, Boston Dispensary. His subject is "Conservative Treatment of Stricture of the Urethra." Page 1035. Address: 868 Beacon Street, Boston.

LANMAN, THOMAS HINCKLEY. A.B., M.D. Harvard University Medical School 1916. F.A.C.S. Assistant in Surgery at the Harvard Medical School. Associate Surgeon at the Children's Hospital. Visiting Surgeon, Children's Service, Cambridge Hospital, Cambridge, Mass. His subject is "Intravenous Urography in Infants and Children." Page 1036. Address: 264 Beacon Street, Boston.

BARNEY, J. DELLINGER. A.B., M.D. Harvard University Medical School 1904. F.A.C.S. Chief of Service, Urological Department, Massachusetts General Hospital. Assistant Professor of Genito-Urinary Surgery, Harvard Medical School. His subject is "Lymphoblastoma as Seen by the Urologist." Page 1038. Address: 87 Marlboro Street, Boston.

SMITH, GEORGE GILBERT. A.B., M.D. Harvard University Medical School 1908. F.A.C.S. Urologist, Massachusetts General Hospital and Palmer Memorial Hospital. Surgeon, Huntington Memorial Hospital. His subject is "Radium in Carcinoma of the Prostate." Page 1040. Address: 6 Commonwealth Avenue, Boston.

O'NEIL, RICHARD F. M.D. Harvard University Medical School 1897. F.A.C.S. Associate Urologist, Massachusetts General Hospital. Associate in Urology to Harvard Graduate School. His subject is "1. Unusual Foreign Body in the Bladder. 2. Unusual Type of Obstruction of the Upper Ureter." Page 1041. Address: 374 Marlboro Street, Boston.

COLBY, FLETCHER H. B.S., M.D. Harvard University Medical School 1918. Associate Urologist, Massachusetts General Hospital. Assistant Surgeon, Huntington Memorial Hospital. Surgeon to Out-Patients, Palmer Memorial Hospital. Assistant in Genito-Urinary Surgery, Harvard Medical School. His subject is "Hydronephrosis from Aberrant Vessel. Report of End Result." Page 1042. Address: 6 Commonwealth Avenue, Boston.

SWAN, CHANNING S. A.B., M.D. Harvard University Medical School 1923. F.A.C.S. Assistant Urologist, Massachusetts General Hospital. His subject is "Serotal Abscess as a Complication Following Vasectomy." Page 1043. Address: 264 Beacon Street, Boston.

ECKELS, JOHN C. A.B., M.D. Harvard University Medical School 1927. Assistant Resident on Urological Service, Peter Bent Brigham Hospital. His subject is "Experimental Transplantation of Ureters into the Bowel." Page 1045. Address: Peter Bent Brigham Hospital, Boston.

QUINBY, WILLIAM C. A.B., M.D. Harvard University Medical School 1902. F.A.C.S. Clinical Professor of Genito-Urinary Surgery, Harvard Medical School. Urological Surgeon, Peter Bent Brigham Hospital. His subject is "Supravital Staining in Neoplasms of the Bladder." Page 1048. Address: Peter Bent Brigham Hospital, Boston.

CRABTREE, E. GRANVILLE. Ph.B., M.D. Harvard University Medical School 1914. F.A.C.S. Urologist to the Boston Lying-In Hospital. His subject is "Changes in the Urinary Tract in Women, the Result of Normal Pregnancy." Page 1048. Address: 99 Commonwealth Avenue, Boston.

PRATHER, GEORGE C. M.D. Harvard University Medical School 1924. Assistant Urologist, Boston Lying-In Hospital, Beth Israel Hospital and Newton Hospital. Assistant in Anatomy, Harvard Medical School. His subject is "The Effect of Changes Due to Pregnancy on Urinary Tract Disease." Page 1051. Address: 99 Commonwealth Avenue, Boston.

WAITE, FREDERICK C. B.Litt., A.M., Ph.D. Assistant in Anatomy, Rush Medical College 1900-1901. Assistant Professor, Associate Professor and Professor of Histology and Embryology, Western Reserve University 1901-. His subject is "Dr. Martha A. (Hayden) Sawin. The First Woman Graduate in Medicine to Practice in Boston." Page 1053. Address: Western Reserve University, Cleveland, Ohio.

MACDONALD, WILLIAM J. M.D. University of Sydney Medical School 1914. Consulting Dermatologist, Cambridge City Hospital. Dermatologist, Carney Hospital. Lecturer in Dermatology, Nursing Staff, Carney Hospital. His subject is "The Two Case Reports of Late Recognition of Syphilis." Page 1055. Address: 270 Commonwealth Avenue, Boston.

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MEDICINA IN NUMMIS

A DESCRIPTIVE LIST OF THE COINS, MEDALS, JETONS RELATING TO MEDICINE, SURGERY AND THE ALLIED SCIENCES

BY HORATIO ROBINSON STORER, M.D.

Edited by Malcolm Storer, M.D.

Boston, 1931

To further the interest now being awakened in Medical History comes this compilation of the existing coins and medals which the late Dr. Horatio Robinson Storer made during the later years of his life, at a time when he was incapacitated from engaging in the active practice of his profession by the sequelae of a serious illness. Death claimed him before he was able to complete the task but, fortunately, his son has been in a position to carry through to a finish his father's labors and in this work we have as well arranged and as complete a collection of medals and coins pertaining to medicine as it has been possible to gather. The private collection which Dr. Horatio Storer assembled and of which Dr. Malcolm Storer, his son, has been the curator, was presented by Dr. Horatio Storer to the Boston Medical Library where it may be examined by those interested.

The significance of such a collection and this compilation is something that perhaps few appreciate, for too often they are only thought of as indicative of a collector's hobby, chiefly interesting to the individual possessed of the hobby, but of little practical value. It is only when one realizes that it is in these long-forgotten curios that there has been hidden the key to much valuable information along the lines of the history of civilization, its arts and sciences, that value of this descriptive list becomes apparent.

Going back to 800 B.C. the numismatists date the earliest evidences of this method of recording history. Made as they were from silver, gold, electrum (an alloy of gold and silver), bronze, iron, lead and copper they are the most imperishable records that we have and because of the uses to which they were put in serving as currency among so many different and widely scattered peoples, they have sufficed to fix or approximate, if not always accurately, dates of the occurrence of important events whether social or political, scientific or artistic, personal, racial or national. For example the finds of great numbers of Roman coins in India and Arab coins in Scandinavia indicate the extent to which the wealthy Romans satisfied their desire for luxuries only obtainable in that far-off eastern region and likewise the acquisition by Arab princes of furs from the remote north.

Coming now to the particular significance of this volume to those whose interests lie along the lines of medical history, we find a great many interesting things depicted upon these medals. First of all the striking of these medals and coins was in recognition of the idea that was ever present among ancient peoples, viz., that for all the occurrences and incidents of life, of whatever sort, some god or demigod was responsible. If these were favorable to the individual the god must be in some way honored; if unfavorable he must be propitiated. It became therefore the natural sequel of this idea that various attributes should be allotted to particular deities and they were thenceforth associated with certain

emblems, which became for them distinctive, as for example the single serpent twined about a stocky branch bearing living branches is symbolic of Aesculapius. In like manner Juno as the protectress of marriage, or the Hastener of the Progress of Childbirth is depicted on medals in various ways.

Apollo with his bow and a mouse at his feet is thought to typify his influence as a destroyer of famine and pestilence, for the mouse figured in the causation of both these dreaded ancient tragedies. He was also at times represented as a Conservator. Many other divinities might be mentioned whose aid was invoked or whose assistance was acknowledged, by the issuance of commemorative coins or medals. Among them may be mentioned Artemis, Athena, also called Hygeia, Isis, Venus, Hercules, Beelzebub, Chiron and the Aesculapiades, that ancient order of physicians founded by Aesculapius. Apart from the foregoing representations of the gods upon medals, certain attributes, virtues and characteristics were not infrequently cited in this way, as for example: Fortuna, Fecunditas, Epidemics, Lactation, Lying-in, Sanitation, Athletics, Drainage, Famines, Water Supplies, the phenomena of Nature, e.g., earthquakes, comets, etc. Certain drugs were also given prominence as shown by medals with the plants from which they were derived inscribed upon them, e.g., Asafoetida, the Pomegranate, the Lily and a balsam known as Storax, alleged to be useful in respiratory diseases, troublesome menstruation, ringing in the ears and goitre.

The major part of this volume of 1134 pages, exclusive of the Bibliography, is devoted to a descriptive account of over 8000 medals and coins. Those that are in the Storer gift to the Boston Medical Library are indicated by a star. This collection which is particularly rich in "touch pieces", personal medals and artist's proofs is one of the largest and most important to be found anywhere. To the student of numismatics Dr. Storer's volume and his valuable collection in the Boston Medical Library will prove a veritable mine of information. The collection is being added to from time to time and it is hoped that any one who may have articles of this sort will appreciate the value they may possess, greatly enhanced it may be, if fitted into the place where they belong in a classified collection. Possessors of such articles may donate them to the Storer foundation in the Boston Medical Library.

MISCELLANY

COPPER PLAYS AN IMPORTANT PART IN NUTRITION

Investigations dealing with the rôle played by copper in red blood formation tend to show that this element is a necessity in maintaining the quality of the blood and that it is the copper in liver that makes it effective in controlling primary anemia.

These facts have been made public in papers by Dr. A. F. Wood, Director of Scientific Work of the Federal Department of Agriculture.

INFORMATION ON INDIVIDUAL HEIGHT-WEIGHT RECORD

United States Office of the Interior,
Washington, D. C.

There has been a demand for a form by means of which a record of a child's growth in height and weight could be kept through his school years. Blanks devised for keeping such a record, in graphic form, three times a year or less often have been made. In addition to the height and weight records, notation can be made regarding illnesses, change of habits, injuries or other incidents in the child's history which might be expected to cause, or which seem to account for changes in his growth.

Those who are looking for a "scientific" (in the sense of exact) means of determining whether a child is of the "right" height or weight for his age will be disappointed. It is possible, however, that, with carefully kept records, extending over the school period, we may learn much regarding what is to be expected along these lines.

Acknowledgments are due to Baldwin, Wood, and other students of child anthropometry for data made use of in preparing this form. After due trial we will be glad of any suggestions for its improvement.

The cost of the record form is 1½ cents each, whether in small or large lots.

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Reilly, Joseph William, St. Elizabeth's Hospital, Brighton, Mass.

Reilly, William Edward, Sylvester Hospital, Allerton, Mass.

Robinson, Hortensia Amanda Farrall, 5 Oakwood Terrace, Newton Centre, Mass.

Rohr, Walter Theodore, 59 Pulver Avenue, Ravena, New York.

Rose, Wilfred Anthony, 76 School Street, Lawrence, Mass.

Ross, George Lewis, 1105 Hampden Street, Holyoke, Mass.

Rosston, Cyril Parks, Samaritan Hospital, Troy, New York.

Rowley, Harold Frederick, 82 East Concord Street, Boston, Mass.

Sauter, Charles William, 317 Rivervend Street, Athol, Mass.

Scenna, Donato Theodore, 137 Laurel Street, Melrose, Mass.

Schildnecht, Page Milburn, El Claire Apartment, Hagerstown, Maryland.

Slattery, John Joseph, 19 Phillips Street, Greenfield, Mass.

Sternstein, Herman, 160 St. Paul Street, Brookline, Mass.

Stevenson, William Robb, 82 East Concord Street, Boston, Mass.

Stockwell, Frank Whitten, 296 Allston Street, Brighton, Mass.

Thompson, Milton Strong, Jr., Free Hospital for Women, Brookline, Mass.

Vaughan, Frank Ivan, 64 Harvard Avenue, West Medford, Mass.

Veal, James Ross, 605 Commonwealth Avenue, Boston, Mass.

Warburton, Norman Wilson, 1334 Massachusetts Avenue, Arlington Heights, Mass.

Wexler, Daniel, St. Luke's Hospital, New Bedford, Mass.

Williams, Vernon Phillips, 333 Cedar Street, New Haven, Conn.

Winer, Irving Morton, 27 Bishopsgate Road, Newton Centre, Mass.

Wozmak, Casimir Francis, 14 Bedford Street, Haverhill, Mass.

Wroblewski, Walter George, St. John's Hospital, Lowell, Mass.

Yood, Bernard, 40 Gaston Street, Roxbury, Mass.

Young, Paul Emerson, Goodyear, Conn.

Zwicker, Kenneth Roswell, 55 Cushing Street, Wollaston, Mass.

Physicians Registered by Virtue of National Board Registration

Bland, Edward Franklin, Massachusetts General Hospital, Boston, Mass.

Clothier, Florence, 200 Riverway, Boston, Mass.

Daffinee, Ralph Weir, Massachusetts General Hospital, Boston, Mass.

Diamond, Louis Klein, 122 Riverway, Boston, Mass.

Donovan, Richard Joseph, 191 Farnham Street, Lawrence, Mass.

Dwight, Richard Warren, 8 Griggs Terrace, Brookline, Mass.

Fagan, John William, 165 Summer Street, Fitchburg, Mass.

Flynn, Herbert Lawrence, Belchertown State School, Belchertown, Mass.

Freeman, William, Box 57, Worcester, Mass.

Goodspeed, Harry B., Memorial Hospital, Worcester, Mass.

Goodwin, Robert Hancock, Boston Lying-in Hospital, Boston, Mass.

Kattwinkel, Egon Emil, 22 Maple Street, Auburndale, Mass.

Linton, James Reginald, Worcester State Hospital, Worcester, Mass.

MacDonald, Milton Theodore, 59 James Street, New Bedford, Mass.

Marsh, Lindus Cody, Worcester State Hospital, Worcester, Mass.

Nigro, Henry, 406 Revere Street, Revere, Mass.

Noble, Robert Cronley, 145 South Street, Northampton, Mass.

Overholt, Richard Hollis, 605 Commonwealth Avenue, Boston, Mass.

Perry, Chauncy Valentine, 24 Franklin Street, Greenfield, Mass.

Sanderson, Paul Graves, 28 Westford Avenue, Springfield, Mass.

Scharles, Frederick Herman, 219 Aspinwall Avenue, Brookline, Mass.

Skeirik, Jibran Yusuf, 1 Alder Street, Lawrence, Mass.

Skelton, Alton Beecher, 71 Jacques Avenue, Worcester, Mass.

Stein, Calbert, 7 Wellington Court, Roxbury, Mass.

Thweatt, Frank Fitzgerald, U. S. Marine Hospital No. 22, Vineyard Haven, Mass.

Wlodkoski, John Barnaby, 35 Cottage Street, Lynn, Mass.

REPORT OF JULY 14, 15, AND 16, 1931 EXAMINATIONS

Medical School	Number Registered	Number Rejected
Tufts College Medical School	44	
Boston University School of Medicine	17	
Middlesex College of Medicine and Surgery	5	16
Massachusetts College of Osteopathy	4	7
Boston College of Physicians and Surgeons	4	6
Harvard Medical School	14	
Kansas City University of Physicians and Surgeons		8
Philadelphia College of Osteopathy	8	7
Kirksville College of Osteopathy and Surgery	5	8
Georgetown University	6	
Jefferson University	3	
University of Pennsylvania	2	
University of Nebraska	1	
Missouri College of Medicine and Science	1	
Hahnemann Medical College, Philadelphia	1	
University of Prague		1
Johns Hopkins	1	
Laval		1
Medical College of South Carolina	1	1
University of Manitoba	1	
Royal Fredrick University, Norway	1	
Yale	1	
Northwestern University	1	
St. Louis College Physicians and Surgeons		1
Vanderbilt University	1	
Meharry Medical College	1	
	123	56

A RADIO MESSAGE PREPARED AND SPONSORED BY THE COMMITTEE ON PUBLIC EDUCATION OF THE MASSACHUSETTS MEDICAL SOCIETY FOR THE DEPARTMENT OF PUBLIC HEALTH

THE CARE OF PULMONARY TUBERCULOSIS*

For centuries tuberculosis stalked through the nations as "Captain of the Men of Death." It struck down alike the young man in the pride of his strength and the maiden in the bloom of youth. Under the name of scrofula it withered the growing child and as meningitis it snuffed out the babe in his cradle. As "galloping consumption" it swept away whole families in months or a few years. Introduced into primitive peoples, as the American Indian and the Eskimo, it has practically exterminated races in a few generations. Spanning the seas, defying all remedies, it has dogged the steps of civilized man wherever he has gone. Sudden plagues have spread greater terror, but for centuries none has taken the continued toll of tuberculosis.

At last this "Captain" has been demoted to the ranks. Eighty years ago one out of every five deaths in Massachusetts was caused by the "Great White Plague", today only one death in twenty is due to tuberculosis. The cause of this change? There are many. Undoubtedly the general improvement in living conditions has been an important factor. Better nourishment and personal hygiene tend to raise bodily resistance. More adequate housing has reduced crowding and consequently the opportunities for direct contact infection. Easier conditions of living and working have reduced the physical strains on the human body. Added to all these, Koch's discovery of the germ of tuberculosis and the demonstration that it is spread from man to man have made it possible to apply intelligent, effective measures to the prevention as well as treatment of the disease.

The successful treatment of tuberculosis may be said to date from the experience of Dr. Edward L. Trudeau, a young New York physician, who in 1873 went to the Adirondacks to die, and instead discovered the possibility of recovery for himself and others. Even then it was years before Dr. Trudeau fully realized the reasons for his achievement. At the time he went to Paul Smith's camp the value of outdoor living, rest and adequate nourishment were just beginning to be appreciated, but exercise, even in the active stage of the disease, was equally stressed and unquestionably often went far to defeat the helpful factors in treatment.

In the past thirty years progress in the treatment of tuberculosis has been rapid, but the underlying principles have not changed. The change has been chiefly in emphasis.

An abundance of pure fresh air is fundamental, but it need not necessarily be mountain or desert air. To Dr. Vincent Y. Bowditch of Boston we owe the proof that tuberculosis can be as successfully

*Broadcast November 12, 1931—Station WBZA—4:50 P. M.

treated in Massachusetts as anywhere in the country, and it is hard to overestimate what this means in terms of life saving. Even today physicians find it hard to convince patients that their sole salvation does not lie in a pilgrimage to Colorado or Arizona and too many reach their goal only to find both strength and funds exhausted.

The place of proper and sufficient food in the treatment of tuberculosis is unquestioned. At one time it was considered that the more a patient could take the better his chance of recovery and, as a result, between-meal feeding, especially of milk and eggs, might be pushed to a point where the patient's appetite was destroyed and his digestion seriously upset. Experience has shown that adequate, well-balanced meals at regular intervals actually increase the total amount of food eaten and at the same time materially reduce intestinal disorders.

It is fair to say that the greatest advance in the treatment of tuberculosis has been due to an increasing appreciation of the rôle of rest in bed. For a long time active exercise was considered essential to maintain the patient's strength and even fifteen years ago it was not uncommon in reputable sanatoria to allow patients to get up for their meals as soon as their temperature had been normal for three days. Today such a practice would be considered little short of criminal and we may well be proud that the outstanding value of continued bed-rest was established very largely by Massachusetts physicians. For even after the value of rest in quieting the symptoms of tuberculosis was recognized, it took a generation to show that, if the process was to remain arrested, time must be allowed for almost complete healing to take place.

It is relatively easy to get a patient on his feet again and to have him feel well. The difficulty is to keep him in bed long enough so that he will stay well.

To understand the value of rest it is only necessary to consider its obvious effect on the diseased lung. When the body is at rest, the lungs expand about sixteen times a minute. During brisk exercise they may expand twice as often and much more completely and the amount of blood pumped through them is probably three or four times as great as during rest. Now, for a tuberculous process to heal the lung must be relatively quiet, and the easiest way to rest the lungs is to rest the whole body.

The realization of these simple facts led to the next step in treatment; that is, pneumothorax. This is nothing more than letting a certain amount of air into one side of the chest, outside of the lung. As the expansion of the lungs depends primarily upon a partial vacuum in the chest cavity, this introduction of air on one side allows the lung on the corresponding side to collapse. As that lung cannot expand by breathing, it is in effect "splinted up" like a broken arm and may be kept collapsed till the tuberculous process has a chance to heal. The other lung meanwhile carries on the work of respiration. Such a procedure is, of course, suitable only for selected cases in the hands of experienced physicians, but properly used it is the most valuable adjunct to bed-rest.

The man on the street knows that the most important factor in the treatment of tuberculosis is early diagnosis, yet in Massachusetts today three-quarters of all cases are past the favorable stage for treatment when they get to the sanatorium. It is easy to blame the doctor, but the answer is not so simple as that. In a series of some 1500 cases Dr. Linsly Williams, of the National Tuberculosis Association, recently found that one-third of the patients waited six months or more after the first symptoms before ever going to a physician. If tuberculosis is to be detected in the favorable stage, the average person must realize that chronic cough, unusual fatigue, loss of weight or chronic indigestion may be signs of underlying disease and let his doctor decide.

The greatest single aid to the recognition of early tuberculosis is the x-ray. Diagnosis cannot safely be made on x-ray alone as some other lung conditions may give x-ray appearances closely resembling tuberculosis, but persons in whom tuberculosis is suspected should, if possible, have the benefit of x-ray examination. In some instances tuberculosis can be definitely ruled out in this way and not infrequently an early process can be detected several months before it would become apparent on physical examination. In sanatoria the x-ray is indispensable for measuring the amount of involvement, for checking the progress of healing and in helping to decide when the patient can safely be discharged.

As physicians we have been too apt to feel that when we have made a diagnosis of tuberculosis and put the patient in a sanatorium our duty to the family is finished. As a matter of fact, it is just begun. Every case of tuberculosis comes from some earlier case and, as Dr. Opie of Philadelphia and others have shown, most tuberculous infection takes place in the home. In the rural section of Tennessee the State Department of Health found that one person in five among the family contacts of known cases was already suffering from active tuberculosis and that practically all the children showed evidence of infection. The fact that tuberculosis is usually spread directly from person to person is too often overlooked and until we have secured a thorough examination including the x-ray of every member of the household we have not done our duty toward the prevention of tuberculosis. In view of the unreasonable stigma which still clings to tuberculosis this may sound like an impossible order. Without a widespread understanding of the need for examination it is. In fact, at all stages success in the treatment of tuberculosis depends as much upon the coöperation of the patient as on the skill of his doctor. Tuberculosis still is the

most frequent cause of death in adolescence and young adult life. Is it too much to expect that the growing understanding on which successful treatment of the disease depends, in time will also make possible its prevention?

CORRESPONDENCE

REPLIES TO QUESTIONS ASKED BY DR. BERNARD ZUCKERMAN

The Commonwealth of Massachusetts
Department of Public Health
State House, Boston

Editor, *New England Journal of Medicine*,

May I take further, and, I fear, unreasonable advantage of your generosity in the matter of space, to reply to the questions asked of me by Dr. Bernard Zuckerman in the *Journal* for October 22?

The main question, as I read the communication, arises from the conflicting reports of two laboratories, following their examinations for syphilis, of the blood of the same patient. Does this patient have syphilis or does he not?

During the past few months there have been observed at the Boston Dispensary Syphilis Clinic several cases of acute gonorrhea in male and female patients in which some of the blood tests for syphilis have been positive during the acute stage of the gonorrheal infection. Subsequently these tests have become permanently negative without antisyphilitic treatment once the acute stage of the gonorrhea has subsided. I recall also seeing a record of the same phenomenon at the Massachusetts General Hospital in a female patient who had an acute gonorrheal infection which had extended into the pelvis. False positive tests are known to occur in a few pathological conditions, as for instance, pneumonia, subacute bacterial endocarditis, typhoid fever, etc. It is possible, therefore, that as a result of further study it may be necessary to add acute gonorrhea to the list of pathological conditions which may produce false positive tests for syphilis.

Dr. Zuckerman, so far as I can determine, found no clinical evidence of syphilis in his patient. It is not stated whether examination included palpation of the urethra for a hidden urethral chancre, or whether any darkfield examinations were made of the urethral discharge for the spirocheta pallida. However, from September 9th (more than six weeks after exposure) to October 13th (nearly twelve weeks after exposure) no clinical or serological (four Hinton tests) evidence of syphilis has been discovered at the Massachusetts General Hospital. There is no history of syphilis nor of exposure to a known case of syphilis; there is no clinical evidence of syphilis. Since the chances are very great that any serological test would be positive in an untreated case eleven or twelve weeks after exposure, it seems reasonable to assume that the earlier, positive serology was associated with the acute, and extensive gonorrheal infection. However, for the sake of certainty, further serological examinations will be made at the Boston City and State Wassermann Laboratories, as well as further clinical study.

This case was reported to this Department by Dr. Zuckerman as one of primary syphilis. Such a diagnosis cannot be made without clinical evidence of a primary lesion, supported either by the discovery of the spirocheta pallida or by positive serology.

Thus we come to the consideration of the various serological tests for syphilis. It must be remembered that they are all specific to a degree only, and that some of the reagents used (three out of five in the Wassermann test), "are biological products whose potency can be maintained with no absolute certainty".[1] Dr. Hinton, whom I have just quoted, says further that the ideal test, "that which will give no positive reaction with serum from non-syphilitic patients and the maximum number of positive reactions with serum from syphilis patients", is not yet discovered. Tests made at different times, in the same laboratory, on the same blood may sometimes disagree. The fact that there are so many serological tests, some depending upon complement fixation (as the Wassermann); some upon flocculation (as the Kahn); and some upon agglutination (as the Hinton), proves that none of them are completely satisfactory.

The League of Nations' Second Laboratory Conference in 1928[2], composed of the leaders in serological research, recommends that, "in order to secure the most reliable information to the clinician, at least two different sero-diagnostic methods should be used since some sera react to the Bordet-Wassermann but not to the flocculation tests and vice versa". The Conference reiterates, "with particular emphasis . . . . . that a positive reaction, in the absence of a clear history or signs of syphilis, should, if only to exclude all possibility of error, never be accepted until a test of at least one more specimen has afforded the same result; . . . . . that, except in the case of a few well-defined pathological conditions, syphilis is indicated with a degree of probability which closely approaches certainty when several tests performed according to different methods give a positive result". Thus, in the presence of acute gonorrhea and in the absence of any history or clinical evidence of syphilis, it may not be safe to accept positive serology alone as diagnostic of syphilis.

In the event of a clear history of syphilis or in the presence of clinical syphilis, there is not the same need for caution, unless the result of the test contradicts the clinical findings. In acute secondary syphilis, for example, all of the various tests will be positive in practically 100% of cases. In tertiary syphilis, and especially neuro-syphilis,

the blood tests may regularly be negative, as may also be the case in primary syphilis from one to several weeks following the appearance of the chancre. On the other hand, syphilologists are still trying to interpret the significance of the irreversible Wassermann, i.e., the Wassermann-fast phenomenon.

Like most laboratory procedures these serological tests must be used with discrimination. The physician who substitutes them for what he should know about clinical syphilis, will be as certain to fall into error as he who accepts laboratory findings to the exclusion of clinical evidence in gonorrhea, or who, on learning that a throat culture is negative for diphtheria, decides that (the clinical picture to the contrary notwithstanding) the patient cannot have diphtheria. There is a great tendency in this day of complex and multitudinous laboratory procedures to accept the laboratory report as a final diagnostic decision from which, even in the face of contradictory clinical evidence, there is no appeal.

Dr. Zuckerman's complaint that "opportunities are not opened to all physicians who are always ready and willing to perfect themselves in fields in which they are lacking," evokes scant sympathy from us. This Department, in 1930, arranged a program of clinics in gonorrhea and syphilis as a part of the New England Health Institute. A wealth of material was provided at considerable effort and inconvenience to four Boston clinics. Every one of the nearly 6000 physicians known to us, in this State, received through the mails and through the *Journal*, invitations to attend and copies of the program. The announcement that in addition to our own local authorities, such other leaders in this field as John H. Stokes, P. S. Pelouze, Hugh Cabot and others, would conduct these clinics, drew the magnificent attendance of twenty physicians (including clinic staff) to one clinic, and less to the others. Two years ago it was announced that eight leading clinicians had volunteered, through this Department, to lecture to medical societies on the management of gonorrhea or syphilis. So far, just two invitations have been received. The Neisserian Medical Society of Massachusetts last May sent personal invitations to more than 200 physicians who are known to treat gonorrhea, to attend a day of clinics in gonorrhea in both male and female, concluding with an evening of such quality that it is still being talked about. Not half a dozen of these invited guests attended either the clinics or the evening session. I am confident that any sincere seeker of information will be welcomed for instruction at any of the twenty-six clinics in this State.

Yours truly,

N. A. NELSON, M.D., *Assistant Director*,
Division of Communicable Diseases.

REFERENCES

1 Problems in the Serology of Syphilis. Wm. A. Hinton, M.D., Boston.

2 League of Nations. Report of the Second Laboratory Conference on the Serodiagnosis of Syphilis. 1928.

RECENT DEATHS

FOLEY—DR. THOMAS BRINSLEY FOLEY of Boston died after a two months' illness, November 12, 1931, at the age of 52.

He was born in Charlottetown, P. E. I., February 29, 1879, the son of Thomas and Mary O'Halloran Foley. He was graduated from Queen's University Faculty of Medicine, Kingston, Ontario, in 1903 and was for several years employed by the Cunard Steamship Company as ship's surgeon. He settled in Boston in 1913 and joined the Massachusetts Medical Society.

His only survivor is a sister, Mrs. J. Russell Shearman of New York City.

PENNY—DR. HERBERT THOMAS PENNY of Cliftondale (Saugus) died at his home in that town, November 20, 1931, at the age of 68 from a cerebral hemorrhage.

Dr. Penny was born in London, Ontario, May 3, 1863, attended the public schools, took a diploma from the College of Pharmacy, Toronto, and a medical degree from the Central College of Physicians and Surgeons, Indianapolis in 1889. He served as physician in the cattle regions of Montana and rode many miles on horseback to attend patients. At one time he served as a sergeant on the Royal Canadian Northwest Mounted Police. In 1896 he took a second M.D. at George Washington University, Washington, D. C. He settled in practice in Saugus and joined the Massachusetts Medical Society in 1903, and was retired this year.

He is survived by his widow and one son.

OBITUARY

RESOLUTIONS REGARDING JOHN JOSEPH DUNPHY

The Boston City Hospital

Boston, November 20, 1931.

Dr. John Joseph Dunphy, an honored member of our Staff, died on October 12, 1931, at the age of thirty-seven. He was a graduate of Holy Cross College in 1917 and of Harvard Medical School in 1921. He served interneships in the Medical and Pediatric Departments of the Boston City Hospital and followed these as Resident Physician in the South Department for one year. He was appointed Junior Visiting Pediatrician at the Boston City Hospital in July, 1924, and was a member of the Staff until his death. He was also a Staff member of the Massachusetts General Hospital and St. Elizabeth's Hospital. For several years he was an instructor in pediatrics at Tufts College Medical School. He is survived by a wife and a six-months-old son.

His service at the Boston City Hospital was faithful and thorough. Of a quiet disposition, he possessed the qualities of the studious and conscientious physician. His gentle nature was particularly efficient in the handling of sick children. He never lost patience with his little charges and in

this way was an inspiration to those associated with him. His death is a marked loss to the hospital and he will be especially missed by the children in the pediatric wards.

P. F. Butler, M.D.,
Secretary, Senior Staff.

NEWS ITEMS

AN ADDRESS DELIVERED BEFORE THE STAFF OF THE CONCORD (MASS.) HOSPITAL STAFF—At the Concord Hospital on Tuesday, November 3, Dr. Edward M. Hodgkins, Assistant Professor of Surgery at Tufts College Medical School, gave an informal talk with lantern slide demonstration entitled "The Evaluation of Operative Procedures in Inguinal Hernia" to the Emerson Hospital Staff, Concord, Mass.

AN ADDRESS BY DR. CHARLES F. WILINSKY—Charles F. Wilinsky, M.D., Deputy Health Commissioner of Boston and Director of the Beth Israel Hospital, delivered the address at the annual meeting of the Maryland Tuberculosis Association held in Baltimore on Monday evening, November 16. The subject of his address was "Community Health Organization" in which he outlined the program carried on in Boston by the official and voluntary agencies engaged in the promotion of health and prevention of disease.

HARVARD MEDICAL SCHOOL

Additional Appointments (Approved by the Corporation November 9, 1931)

For one year from September 1, 1931:

LaVerne Almon Barnes, Ph.D., Assistant in Preventive Medicine and Hygiene.

Rutledge Starr Lampson, A.B., Teaching Fellow in Anatomy.

Hugh Meyers Crumay, S.B., Teaching Fellow in Pharmacology.

John Harold Hanks, Ph.D., Research Fellow in Bacteriology.

Fu-t'ang Chu, M.D., Research Fellow in Pediatrics.

Chapman Hunter Binford, M.D., Research Fellow in Preventive Medicine and Hygiene.

From November 1, 1931 to September 1, 1932:

Koji Ando, M.D., Research Fellow in Preventive Medicine and Hygiene.

THE SHATTUCK LECTURE FOR 1932—The *Journal* has been informed that Dr. Frank Burr Mallory has been selected to deliver the Shattuck Lecture before the Massachusetts Medical Society at the 1932 annual meeting.

NOTICES

REMOVALS

Benjamin Parvey, M.D., announces the removal of his office from 311 Commonwealth Avenue to 636 Beacon Street, Suite 204, Boston, Massachusetts.

Max Baff, M.D., announces the removal of his office from 141 East Central Street, Worcester, to 15 Shamrock Street, Worcester.

Alice E. Butler, M.D., announces the removal of her office to 321 Dartmouth Street, Boston.

Donald K. McClusky, M.D., announces the opening of offices at 332 Main Street, Worcester.

RADIO HEALTH MESSAGES

Sponsored by the Public Education Committee of the Massachusetts Medical Society and the Massachusetts Department of Public Health.

Courtesy WBZA. Thursdays at 5:17 P. M.

December

3 Overweight—Cause and Prevention
10 Can We Prolong Life?
17 Pasteurized or Raw Milk
24 Public Health in the Coming Year
31 Mental Health

State House Broadcast

Sponsored by the Massachusetts Department of Public Health.

Courtesy WEEI. Fridays at 12:30 P. M.

The various activities of the Department are discussed by the Directors of its nine Divisions.

Radio Health Forum

Directed by the Massachusetts Department of Public Health.

Courtesy WEEI. Fridays at 4:50 P. M.

Queries from the public are answered under the sponsorship of the Department.

Questions on Health and Prevention of Disease may be sent to: Radio Health Forum, State Department of Public Health, State House, Boston.

PROGRAM

Special Series of Broadcasts

Sponsored by the Massachusetts Department of Public Health. Courtesy WEEI. Mondays at 7:15 P. M.

Health from Zero to Ninety

November

30 Health and the College Student
Mary DeKruif, M.D.

December

7 Health and Safety of the Young Adult
C.-E. A. Winslow, Ph.D.
14 Health At and After the Prime of Life
Herbert L. Lombard, M.D.

White House Conference on Child Health and Protection

Round Tables

December

21 Round Table No. 1—Why Another Conference?
Conducted by George H. Bigelow, M.D.
28 Round Table No. 2—How Much Care Does the Well Child Need?
Conducted by Mr. Frank W. Kiernan

1932
January
4 Round Table No. 3—Health in Education—Education in Health
Conducted by Raymond Patterson, Ph.D.
11 Round Table No. 4—What a Community Owes to Its Children
Conducted by Lila Owen Burbank, M.D.
18 Round Table No. 5—Unto the Least of These
Conducted by Mr. Alfred F. Whitman

MEDICAL CLINIC AT THE PETER BENT BRIGHAM HOSPITAL

At 3:30 P. M., on Thursday, December 3, in the Amphitheatre of the Peter Bent Brigham Hospital, a medical clinic will be given by Dr. Henry A. Christian, to which physicians are cordially invited. The clinics will be held regularly on Thursday afternoons.

THE BOSTON CITY HOSPITAL CLINIC

The December Clinic at the Boston City Hospital will be held in the Surgical Amphitheatre, December 18, 1931, at 8:15 P. M.

Dr. Reginald Burbank of New York will be the speaker of the evening and talk on Arthritis.

The discussants will be Dr. William Robey (Medical), Dr. G. P. Sanborn (Immunological), Dr. Joseph Shortell (Orthopedic).

COMMITTEE ON CLINICS,
Boston City Hospital.

REPORTS AND NOTICES OF MEETINGS

PLYMOUTH DISTRICT MEDICAL SOCIETY

The regular meeting of the Plymouth District Medical Society was held at the State Farm in Bridgewater, on Thursday, October 15, 1931 with one of the largest gatherings of physicians that has ever convened at this institution at one time. There were representatives from Plymouth, Norfolk and Bristol Counties. The guests were received by Dr. John H. Weller and Dr. George Maxfield, acting as a reception committee in the absence of Dr. William T. Hanson, Medical Director of the State Farm.

The meeting was opened by Dr. John J. McNamara, President of the Plymouth District Society, who in a short address of welcome, stated that it was gratifying to note the very fine response that was shown by the presence of the large body of physicians. He said that it was distinctly a compliment to Dr. William T. Hanson, Medical Director of the State Farm, a splendid tribute to Dr. A. Warren Stearns, Commissioner of the Department of Correction of the Commonwealth of Massachusetts, and to Dr. Edward J. Denning, Professor of Clinical Medicine at Tufts College and Physician-in-Chief of the Carney Hospital in Boston, who were to make the principal addresses.

The records of the last meeting, as read by Dr. George A. Moore, were accepted. Dr. Charles G. Miles, Chairman of the Committee on Clinics, made a progressive report. The Committee on Resolutions for the late John F. Callahan, consisting of Dr. M. F. Barrett, Chairman; Dr. Thomas H. McCarthy and Dr. Charles G. Miles, was granted further time in order that the report might be ready for the next meeting.

A letter was read from Dr. W. L. Burrage, Secretary of the Massachusetts Medical Society, and sponsored by President Halbert G. Stetson in relation to the appointment of a member from the Plymouth District Society to become a member of the Committee on Public Relations. President McNamara appointed Dr. Thomas H. McCarthy to represent the Plymouth District. After receiving the appointment, Dr. McCarthy addressed the meeting, explaining the subject matter of the letter which has been in controversy for the past four years. The agitation originated among the members of the Plymouth District, one of the foremost leaders having been the late lamented Dr. Callahan. He felt that something must be done to protect the general practitioners, but that the specialists could look after themselves.

Other important subjects to be studied by this Committee were referred to as follows:

Health clinics promoted by the Massachusetts Public Health Department seem to be one of the chief problems requiring attention. It seems that something must be done to stop these Health Agencies. This matter was debated at the last Council meeting. Heretofore autocratic members of the Council have controlled the situation but now the country practitioner is showing interest and asking for protection. The Council makes the laws but this agitation coming from the country practitioner demands consideration. It was decided that one from each district medical society should be appointed on the Public Relations Committee, the President of the Society being a member ex-officio. This committee will make recommendations for consideration by the Council. Most of the debate was against the State Department of Public Health. The Council is determined that this matter must be settled once and for all. There has been a condition of unrest among the general practitioners for the last few years because of the tremendous inroads that have been made upon their pocketbooks by industrial medicine and Health Clinics. Physicians employed in these Health Clinics sell their services for almost nothing. People well able to pay the regular fee to the general practitioner are accepted in these various clinics. This must reduce the income of the men who are practicing general medicine. "I am of the opinion," said Dr. McCarthy, "that I am right in saying that the Council feels that this condition must stop. Personally I feel that, if these conditions are allowed to continue, in a short space of time there will be no general practitioners and State Medicine will take their place. Surely if all of these health clinics allow

those who are able to pay the regular fee to the general practitioner or even the specialist to get services of these clinicians for nothing, anyone can see that it reduces the income of all of us. We feel that it is only by a committee such as this one that we can control this situation."

The business of the morning was concluded and President McNamara then introduced the principal speaker, Dr. Edward J. Denning, Professor of Clinical Medicine at Tufts Medical College and Physician-in-Chief to the Carney Hospital in Boston, who took for his subject "Acute Anterior Poliomyelitis." * Dr. Denning gave an excellent exposition of this disease which has become so prevalent throughout Massachusetts at the present time. It was a very masterly address and so interesting that, after he had concluded, various physicians asked him many questions in regard to this disease which were promptly answered.

The next speaker was Dr. A. Warren Stearns, Commissioner of Correction for Massachusetts and Dean of Tufts Medical School, whose subject was "Medical Problems of the Criminal." Dr. Stearns expressed his satisfaction at being able to address a group of physicians on this topic. "Physicians," he said, "have had training in scientific methods and so should appreciate the application of such methods to the problem of the criminal. The social problems with which society has to deal consist of the sick, the poor and the bad. These groups are not clearly defined but overlap and intermingle with each other in many ways. This does not infer that criminals are physically ill, but they are certainly socially sick. We have an example of the combination in venereal disease where individuals are not only sick but bad.

"Medicine has built up an elaborate technique in caring for the sick, so we may safely leave them to the medical profession. As regards the poor, a few years ago there were 30 or 40 orphanages in and about Boston, but at the present time they are almost extinct. That is, child guidance has become a profession and dependent children are no longer treated indiscriminately as paupers. Formerly, when a person wished to adopt a child he would go to an orphanage and it was considered a great achievement to obtain the adoption of a defective child. Now, by means of modern methods, children are carefully scrutinized and the whole procedure of adoption has been put upon a high professional basis.

"The blind have also been removed from the pauper group and are handled as a special problem. When the old age pension law has been operating for a few years it seems fair to hope that the aged will be treated as a special class.

"So gradually the poor are being handled on the basis of diagnosis. Whereas the motive of pity perhaps promoted the physician originally, and sympathy has instigated efforts for the poor, fear and hate still motivate most of the procedure which has to do with the bad. In olden days the whipping post and the gallows gave ample expression to these motives. A hundred years ago there were a number of persons imprisoned for smoking cigars on the street.

"About the time of the Revolution institutional care for minor criminals came in vogue. Still the purpose was correction in the old sense. In 1828 delinquent children were sent to a House of Refuge, and here for the first time educational methods in a modern sense were applied to convicted offenders. Later, probation came in as a method of therapy. In the 70's the reformatory idea had grown to such a degree that special institutions were created to care for a group aged between 16 and 30. This effort depended entirely upon an educational formula for its success, and diagnosis was still neglected.

"In the early part of this century psychiatrists began the study of criminals. It was found that there was a certain percentage of feebleminded and insane in prison populations and for the moment it looked as though future developments would depend upon psychiatry for their inspiration. Today the social sciences have assumed a clinical aspect. At the present time life histories, carried out in great detail, are being taken on prisoners; a diagnosis is postulated on each case, and a program devised in every way comparable to medicine in so far as method is concerned. We found a certain percentage of criminals to have nervous and mental diseases, and special programs have been devised for these. Furthermore, there is a tremendous percentage of sick and physically disabled persons in prisons. Special programs are being devised for them. There is a tremendous overlapping of all three groups. Many cases which are properly classified as sick are complicated by poverty and crime. So a great many criminal cases are only incidentally bad. The great mass, however, are still social problems. They come from broken homes and are often problem children grown up. In these cases we usually try probation first with its social service technique. As a last resort such individuals are sent to prison. Whereas seven or eight thousand a year are sent to prison in this state, over twenty thousand are tried on probation.

"The latest development in this state is the new prison at Norfolk. Here each individual is scrutinized with all the technique known to the various disciplines which contribute to diagnosis. Then a program is laid out for the individual while he is in prison looking toward his discharge into society. It is hoped upon his discharge that all remedial medical defects may have been corrected and that adverse social situations may have been adjusted. There will of course be a residuum for whom we can only forecast segregation.

"I feel that all of this is a job for the future and as doctors come in contact with all of these problems in their daily work, it is important that they take part in this development. The family doctor has a great influence. He is the one who gets first-hand information from the family. He gets the story

*Dr. Denning's paper has not yet been submitted for publication.

from those who have become separated and those who allow their children to run loose upon the street. My advice to all physicians is:—do not become sentimental and feel that only your sympathies are needed. Do not become reactionary and hard-boiled and join in the general clamor for a victim. Keep your medical poise and be in this matter as in so many others, a faithful advisor. Give the individual a chance in the same manner that you would a sick person. The opportunity on the part of medicine to assist in this problem is tremendous. Also the duties of medicine are serious ones and I have no doubt that the future generation of physicians will take its part in helping to solve these distressing problems."

After Dr. Stearns had concluded, the physicians and surgeons present asked numerous questions. Dr. Stearns was very courteous and prompt in answering the different questions that were asked. After Dr. Stearns' address, adjournment followed. A very excellent dinner was served to a large number of physicians who accepted the invitation to be present as the guests of the State of Massachusetts, through Superintendent William T. Hanson at the State Farm in Bridgewater.

A MEETING TO CONSIDER VARIOUS MATTERS WITH RESPECT TO THE CARE OF CHILDREN

At Hyannis, Mass., on Wednesday, October 21, there was a gathering of local health officers and educators to consider various questions concerning the care of children. The groups in conference were the Southeastern Massachusetts Association of Boards of Health and the Old Colony (School) Superintendents' Association. The general subject for discussion was the possible closer coöperation of school and health departments. For a starting point certain sections were presented of the Children's Charter of the White House Conference having reference to schoolhouses and in general the care of children of school age. During the morning session the chairman was Mr. Carlon E. Wheeler, school superintendent of Barnstable, with Superintendent Anson B. Handy of Plymouth as principal speaker, and in the afternoon Mr. J. B. Berry, health officer of Brewster, president of the Southeastern Association, was in the chair, with Mr. G. W. Hallett, health officer of Barnstable, Dr. Charles W. Milliken, school physician of New Bedford and Dr. Richard P. MacKnight, local State Health Officer as principal speakers.

The meeting was inspired by the health officers' association. Mr. Hallett, for many years a leading spirit and a past president in the organization, stated that in it he saw fulfilled the hope of the past twenty years.

Mr. Handy discussed briefly many matters in the health administration of the schools, and in a somewhat informal way, replies were made to his questions from the floor. One of these was whether schools should be closed in times of outbreaks of communicable diseases. Medical advice seems to be against closing. This policy can be carried out in cities, but in small communities there is the popular clamor for closing, and undoubtedly there may be local conditions which make this desirable. It is clearly a matter in which the schools and the boards of health should act together. There are conditions in which the schools might remain open and other assemblages, like theatres, had better be closed.

Along the same line was the question of the fumigation of buildings. In cities it is not generally practiced, but there are localities where its mental effect on the people is to be considered. There was a discussion of the requirements for reporting communicable diseases. Mr. Handy considered it very necessary for the health officers to report all cases to the schools because the information as to residence might be valuable in bringing contacts, under examination. A portion of this discussion participated in by Dr. Milliken brought out the advisability of notifying the school physician of communicable diseases among the pupils. Experienced teachers often have ability to detect disturbances among the children, but they, as well as the school nurses, should report such observations as "suspicious", rather than attempt to make diagnoses. In the absence of a school physician, the board of health should be notified at once. In matters like health clinics, anti-diphtheria campaigns, etc., it is distinctly a function of the health authorities to act with the school principals.

The question of some filth diseases, which are not notifiable, or the presence of vermin, was considered by Mr. Handy. What is to be done with a family in whose home are breeding places which have not been abolished? It would seem that unless it is serious enough to be declared a public nuisance, and abatable by the board of health, this is a difficult situation unless diplomacy can bring about reform.

"The health authorities should safeguard the water and milk supplies of the schools", continued Mr. Handy, "and here the discussion showed some variations in practice. So far as the water is concerned, it can always be tested, but with milk there are a number of local factors. For example, in some places the school milk fund is given by individuals who think that they should control the expenditure, and in so doing seek the cheapest source, which may be a careless local producer. In Plymouth the school authorities did at one time permit either raw or pasteurized milk for the school children, but experience made it evident that the only safe course is to insist on pasteurization."

At this point the chairman propounded the question, "Is it within the province of a layman to report cases, without a physician's advice?" To this Dr. MacKnight made answer that it is quite customary to take the word of the family physician. Dr. Milliken next spoke quite at length on topics suggested, stating the custom in the city of New Bedford. The closing of the schools is to a large extent governed by local conditions. In cities it is unquestionably better to have the children under the supervision that the schools give rather than to have them run-

ning about the streets, with a potentially large number of contacts. In New Bedford, all cases that have not been seen by a physician, presumably viewed with suspicion in school, are reported to his office within twenty-four hours. Skin diseases are excluded from the New Bedford schools by the local regulations. The length of quarantine varies, not all communities having adopted the standards suggested by the State Department of Public Health.

Turning to the matter of return to school, Dr. Milliken questioned whether a layman should be the authority on which the return is based. "It is impossible for me to see every case," he said, and many children with mild chicken pox do not see a physician. For such, a questionnaire has been prepared in which the essential facts are set forth by some one familiar with the case. Times of quarantine are well established. There are scarlet fever cases so light that the child is away from school only two or three days, has no symptoms, and reports having had a cold. In New Bedford the nurses examine all such children. Suspicious cases can be temporarily excluded from school.

In answer to the question respecting the spread in schools of athlete's heel, Dr. Milliken stated that all the school showers are inspected regularly and disinfected two or three times a week.

From the floor came the suggestion of attention to the school busses, a matter which apparently should receive some consideration with regulations to prevent overcrowding.

Major George Sever referred to conditions in a small town with which he is familiar. Three men constitute the board of selectmen, the board of health and the board of public welfare. They are all laymen and do not have the training suggested by the State Health Department. There are three doctors in the town, but no one of them will serve on this board. The salaries are absurdly small, not enough to pay for gasolene that is consumed in making the necessary rounds. There is no sanitary inspector. What is the best line of procedure?

To this question Dr. MacKnight then made partial answer, giving more details at the afternoon session. The same problem arose some years ago in educational equipment of small towns and legal authority was given for towns to form districts to secure competent supervision. At the present time the State Health Department has plans, backed on permissive legislation, whereby health units may be formed by neighboring communities. The units will then be able to secure a proper health officer, with the cost divided among them. Such a health unit exists in Barnstable County; another of fifteen towns in Berkshire, and the Nashoba district has recently been formed near Ayer. Under this plan proper health supervision may be assured, and at the same time no town need lose its identity.

The principal speaker during the afternoon was Mr. Hallett, whose leading thought was, that the rural child should have advantages in schools quite as good as those of the city child. Our citizens should endorse every move for better health, and should see to it that our educational authorities work in close coöperation with boards of health.

George F. Crocker, Jr., and George T. Mecarta, Barnstable County milk inspectors, spoke in detail with reference to school milk supplies, which vary in delivery from the can to the half-pint bottle, the first-named being a matter of economy. Mr. Crocker outlined the custom in Barnstable of examining samples of school milk. Mr. Mecarta emphasized the need of education concerning wholesome milk.

The subjects broadened during the afternoon session, consideration being given to care in inspection at abattoirs where condemned cattle are slaughtered, duties of boards of health with reference to school milk, comparatively small appropriations usually given for health work, need of closer coöperation of boards of health and education, and other general subjects.

A motion was made to have a similar coöperative meeting next season, and in the meantime to have joint meetings of the executive committees of the two societies. Mr. C. R. Bassett announced the early calling of a meeting of health officers of Barnstable County to discuss the acceptance of the State standards for local health department rules.

SOUTH END MEDICAL CLUB

Dr. Reginald Fitz, Associate Professor of Medicine, Harvard Medical School, and Visiting Physician to Peter Bent Brigham Hospital, discussed Diabetes at a meeting of the South End Medical Club held at the Boston Tuberculosis Association on November 17. Diabetes is a disease of middle life and old age, said Dr. Fitz, and is more common among fat people over the age of forty. It is a disease in which the individual is unable to secure the full value of the starch and sugar which he eats and to a lesser extent this applies to all the food because some of it is lost as sugar in the urine. The treatment of diabetes depends upon diet, insulin, exercise and all those factors which promote good health such as sunlight, fresh air, cheerfulness, temperance and courage. The diet of diabetics today is incomparably more liberal than a generation ago and is constantly becoming more unrestricted. Each person should have a diet prescribed by his own physician and suited to his particular needs. If the pancreas of a diabetic does not furnish him enough insulin to take the prescribed diet without the appearance of sugar in the urine and if he is not strong and does not feel and appear in good condition he had better help out his own lack of insulin by taking insulin which has been made for him out of the pancreas of animals. It is desirable for any diabetic patient to know how to use insulin because in an emergency, such as during the course of an infection, his diabetes may become worse and a little insulin might save his life. Insulin must be injected under the skin to be of use. It has no value when given by mouth. Insulin brings back strength, weight and general

good health and this may not wholly be because of the extra food which it allows. It has been used with beneficial effects in cases other than diabetes. In closing Dr. Fitz said, "Diabetics may have a variety of complaints, therefore it is always wise to examine the urine for sugar." He advises people to avoid getting fat by refraining from overeating. Never fear giving insulin to a patient in a coma. One dose will never kill. Always be on the lookout for the difference between diabetic coma and insulin coma.

BELMONT MEDICAL SOCIETY

The next meeting of the Belmont Medical Society will be held on Friday, November 27, at 8:30 P. M., at All Saints' Parish House, Clark Street, Belmont. The speaker will be Dr. Sydney C. Wiggin, Instructor in Anesthesia at Harvard Medical School and Harvard Graduate School of Medicine, Anesthetist at Faulkner Hospital and Assistant Anesthetist at the Boston City Hospital. Subject: Newer Methods in Anesthesia.

STEPHEN J. MALONE, *Secretary.*

NEW ENGLAND HEART ASSOCIATION

CARDIAC COURSE

The second meeting of the Cardiac Course of the New England Heart Association for the season 1931-1932 will be held in the Boston Medical Library (John Ware Hall) on Wednesday, December 2, at 4:30 P. M.

Congenital Cardiovascular Disease

1. Anatomy and Physiology. Dr. A. C. Ernstene.
2. Clinical Types and Diagnosis. Dr. Howard B. Sprague.
3. Prognosis (Follow-Up Studies). Dr. Hyman Green.
4. Discussion. Dr. Kenneth D. Blackfan.

All who are interested are invited to attend.

PAUL W. EMERSON, *Secretary.*

HARVARD MEDICAL SOCIETY

Next meeting in the Peter Bent Brigham Hospital Amphitheatre (Van Dyke Street entrance), Tuesday evening, December 8, at 8:15 o'clock.

PROGRAM

Presentation of cases.

The Evolution of the Babinski Response as Illustrated in the Monkey, Baboon, and Chimpanzee. (With motion pictures.) By Dr. John Fulton, Professor of Physiology, Yale Medical School.

Medical students and physicians are cordially invited to attend.

JOHN HOMANS, *Secretary.*

MIDDLESEX SOUTH DISTRICT MEDICAL SOCIETY

Meeting, December 10, 1931, Middlesex Sanatorium, Waltham. "Symposium on the Surgical Treatment of Pulmonary Tuberculosis."

"The Surgical Treatment of Pulmonary Tuberculosis," Dr. Mark H. Joress, Boston.

Discussion: "The Medical Viewpoint," Dr. Andrew Peters and Dr. Jacob Kaminsky of the Sanatorium Staff.

"The Surgical Viewpoint," Dr. Harlan F. Newton, Boston; Dr. Edward D. Churchill, Boston.

How to get there: The Sanatorium is situated on Trapelo Road two and one-half miles from Waverley Square. From Lexington, Waltham and Newton follow Route 128 and then turn on Trapelo Road. The Sanatorium is one-half mile from the intersection.

The Fellows of Middlesex South are urged to make this meeting a record attendance. Come and see this most important addition to the health facilities of Middlesex County.

ALEXANDER A. LEVI, *Secretary.*

SOCIETY MEETINGS

CONGRESSES AND CONFERENCES

November 27—Belmont Medical Society. See notice elsewhere on this page.
November 30—Harvard University Medical School. Lecture on Civilization and Disease. See page 1026, issue of November 19.
December 2—New England Obstetrical and Gynecological Society. See page 981, issue of November 12.
December 2—New England Heart Association. See notice elsewhere on this page.
December 3—Medical Clinic at the Peter Bent Brigham Hospital. See page 1072.
December 8—Harvard Medical Society. See notice elsewhere on this page.
December 11 - May 6—The William Harvey Society. See page 745, issue of October 8.
December 11—New England Pediatric Society. See notice on page 1030, issue of November 19.
December 18—The Boston City Hospital Clinic. See page 1072.
April 4-8, 1932—The American College of Physicians. See notice on page 1232, issue of June 4.
Autumn 1931—Spring 1932—International Medical Postgraduate Courses in Berlin. See page 468, issue of August 27.

DISTRICT MEDICAL SOCIETIES

Essex North District Medical Society

January 6, 1932—At Haverhill.
May 4, 1932—Annual meeting at Lawrence.

Essex South District Medical Society

December 2, Wednesday—Beverly Hospital. Clinic 5 P. M. Dinner 7 P. M. Speaker: Dr. Raymond S. Titus, Boston. Subject: Some Complications of Pregnancy and Puerperium.
January 6, 1932, Wednesday—Danvers State Hospital, Hathorne. Clinic 5 P. M. Dinner 7 P. M. Speaker: Dr. Harry Solomon, Boston. Subject: Modern Treatment of Syphilis.
February 3, 1932, Wednesday—Council Meeting, Boston.
February 10, 1932, Wednesday—Hawthorne Hotel, Salem. Dinner 7 P. M. Speakers: Dr. Lincoln F. Sise and Dr. Harry H. Germain. Subject: Selection of the Anesthetic for the Patient and Operation. Dr. Sise to speak from the viewpoint of the Anesthetist, and Dr. Germain from the viewpoint of the Surgeon.
March 2, 1932, Wednesday—Lynn Hospital. Clinic 5 P. M. Dinner 7 P. M. Subject to be announced later. Speaker: Dr. Elmer W. Barron, Boston.
April 6, 1932, Wednesday—Essex Sanatorium, Middleton. Clinic 5 P. M. Dinner 7 P. M. Speaker: Dr. Arthur P. Wakefield, State Department of Health. Subject: 10-Year Tuberculosis Program in the Public Schools.
May 5, 1932, Thursday—Censors' Meeting, Salem Hospital, 8:30 P. M.
May 10, 1932, Tuesday—Annual Meeting. The Tavern, Gloucester. Speaker and subject to be announced later. Ladies invited.

Franklin District Medical Society

Meetings will be held on the second Tuesday of January, March and May at the Weldon, Greenfield, at 11 A. M.

CHARLES MOLINE, Secretary.

Middlesex East District Medical Society

At a meeting of the executive committee the following schedule for the Middlesex East District Medical Society was arranged:

January—At Melrose.